PB-230 465

PACIFIC NORTHWEST WATERCRAFT POLLUTION STUDY. APPENDIX

Pacific Northwest Water Laboratory
Corvallis, Oregon

February 1967

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PACIFIC NORTHWEST
WATERCRAFT POLLUTION STUDY

by the

Technical Services Program

of the

Pacific Northwest Water Laboratory
Corvallis, Oregon

February 1967

APPENDIX

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Northwest Region
Federal Water Pollution Control Administration
U. S. Department of the Interior

EXHIBITS

EXTENT OF WATERWAYS

1. Navigable Coastal and Inland Waterways, Pacific Northwest

2. Lakes and Reservoirs Greater than Ten Square Miles, State of Idaho

RECREATIONAL WATERCRAFT
AND
SUPPORTING SHORE FACILITIES

3. Recreational Watercraft in the Pacific Northwest, (excluding Alaska)

4. Supporting Shore Facilities for Pleasure Craft, State of Oregon

5. Supporting Shore Facilities for Pleasure Craft, State of Washington

6. Supporting Shore Facilities for Pleasure Craft, State of Montana

7. Directory of State Harbor Facilities, State of Alaska

COMMERCE, COMMERCIAL WATERCRAFT
AND
SUPPORTING SHORE FACILITIES

8. Port Directory, States of Oregon and Washington

9. Traffic through Bonneville, Dalles, and Willamette Falls Locks, 1930 - 1965

10. Commercial Shipping for Washington Ports, 1964

11. Commodities Shipped In and Out of Portland and Seattle Harbors - 1964

12. Commercial Water Traffic, Columbia and Snake Rivers, 1964

13. Commercial Water Traffic, Oregon, 1964

14. Commercial Water Traffic, Washington, 1964

15. Commercial Water Traffic, Idaho, 1964

2<

16. Traffic Statistics for State Ferries, State of Washington, 1956 - 1965
17. Commercial Water Traffic, Alaska, 1964
18. Number and Registry of Commercial Vessels Arriving in Portland, 1965, 1966 and Puget Sound, 1965
19. Piers, Wharves, and Docks, Port of Portland, Oregon 1962
20. Piers, Wharves and Docks, Port of Coos Bay, Oregon, 1963
21. Piers, Wharves, and Docks, Port of Anacortes, Washington, 1963
22. Piers, Wharves, and Docks, Port of Bellingham, Washington, 1963
23. Piers, Wharves, and Docks, Port of Everett, Washington, 1963
24. Piers, Wharves, and Docks, Port of Grays Harbor, Washington, 1963
25. Piers, Wharves, and Docks, Port of Longview, Washington, 1963
26. Piers, Wharves, and Docks, Port of Olympia, Washington, 1963
27. Piers, Wharves, and Docks, Port of Port Angeles, Washington, 1963
28. Piers, Wharves, and Docks, Port of Tacoma, Washington, 1963
29. Piers, Wharves, and Docks, Port of Seattle, Washington, 1963
30. Piers, Wharves, and Docks, Port of Vancouver, Washington, 1963
31. Commercial Fisheries, State of Oregon
32. Commercial Fisheries, State of Washington
33. Commercial Fishing Fleet, State of Washington, 1959

GOVERNMENTAL WATERCRAFT
AND
SUPPORTING SHORE FACILITIES

34. Federal Watercraft, Pacific Northwest, 1966
35. State Watercraft, Pacific Northwest, (excluding Oregon), 1966
36. Supporting Shore Facilities, Washington State Ferries, State of Washington

WATERCRAFT POLLUTION

37. Letter dated December 23, 1966, State of Montana, State Board of Health

38. Letter dated January 6, 1967, Marion County Sheriff's Office, Salem, Oregon

39. (Proposed Study) Bacteriological and Esthetic Effects of Pleasure Boat Waste Discharge on Small Harbors, University of Washington, Seattle, Washington

40. Oil Pollution Investigation, Navigable Waters of the Pacific Northwest, (excluding Alaska), January 1965 - December 1966

41. Oil Pollution Investigation, Navigable Waters of the Pacific Northwest, (Alaska), July 1956 - January 1967

42. Oil and Refuse Pollution Report, State of Alaska

43. Special Report, Loss of Marine Life on Pacific Beaches of Quinault Indian Reservation and Adjoining Areas, Washington - Incidental to Stranding of Petroleum Barge at Moclips, Washington, March 11 to 17, 1964

44. Engineering Report at the Butterworthing of the HAWAIIAN RANGER at Terminal 4, June 15, 1966

45. Letter dated July 26, 1966, State of Alaska, Department of Health and Welfare

46. Interoffice memorandum, Federal Water Pollution Control Administration, Department of the Interior, June 30, 1966

47. Spoil Areas on Navigation Projects, U. S. Army Engineer District, Portland, Oregon

48. Dredging Schedule, U. S. Army Engineer District, Seattle, Washington

49. Letter from Oregon State Sanitary Authority, January 27, 1967, regarding Watercraft Pollution

50. Department of the Army, Office of the Chief of Engineers, Washington, D. C., Regulation No. 1125-2-302, Plant, Sewage Disposal Equipment, October 28, 1965

51. Report and Addendum to Report of Study pertaining to Marine Toilets and Chlorinators, August 1962

52. Letter from Naval Facilities Engineering Command, Department of the Navy, May 16, 1966, regarding Sewage Collection System

53. Waste Water Disposal Practices of the U. S. Maritime Administration, December 6, 1965

LEGISLATION AND REGULATIONS

54. Portland, Oregon, City Ordinances, Section 16

55. Seattle, Washington, Ordinance No. 73578, October 23, 1944

56. Seattle, Washington, Building Code, Chapter 3.74, Ordinance No. 82223, October 21, 1964

57. Water Pollution Control Regulations, Idaho State Board of Health, May 11, 1959

58. State of Washington, Pollution Control Commission, Chapter 216, Laws of 1945 and Chapter 71, Laws of 1955

59. Alaska Statutes, Water Control Act

60. House Bill No. 53, State of Montana

61. Chapter 362, Senate Bill 185, 1965 Oregon Laws

62. State Marine Board Regulations, State of Oregon

63. Boat Operations in Deschutes County, Oregon, Oregon State Marine Board

64. U. S. National Park Service, Code of Federal Regulations

65. U. S. Forest Service Regulation regarding Diamond Lake, July 16, 1962

66. U. S. Army, Corps of Engineers, Code of Federal Regulations

67. U. S. River and Harbor Act of March 3, 1899, 33 U. S. Code 407

68. U. S. Oil Pollution Act of 1924, 33 U. S. Code 431 - 437

69. SOPA Puget Sound Instruction P5400.1A

70. Canada Shipping Act, Oil Pollution Prevention Regulations

71. Model Act on Sewage Disposal from Boats

72. A Model Act to Prohibit Littering and the Disposal of Untreated Sewage from Boats

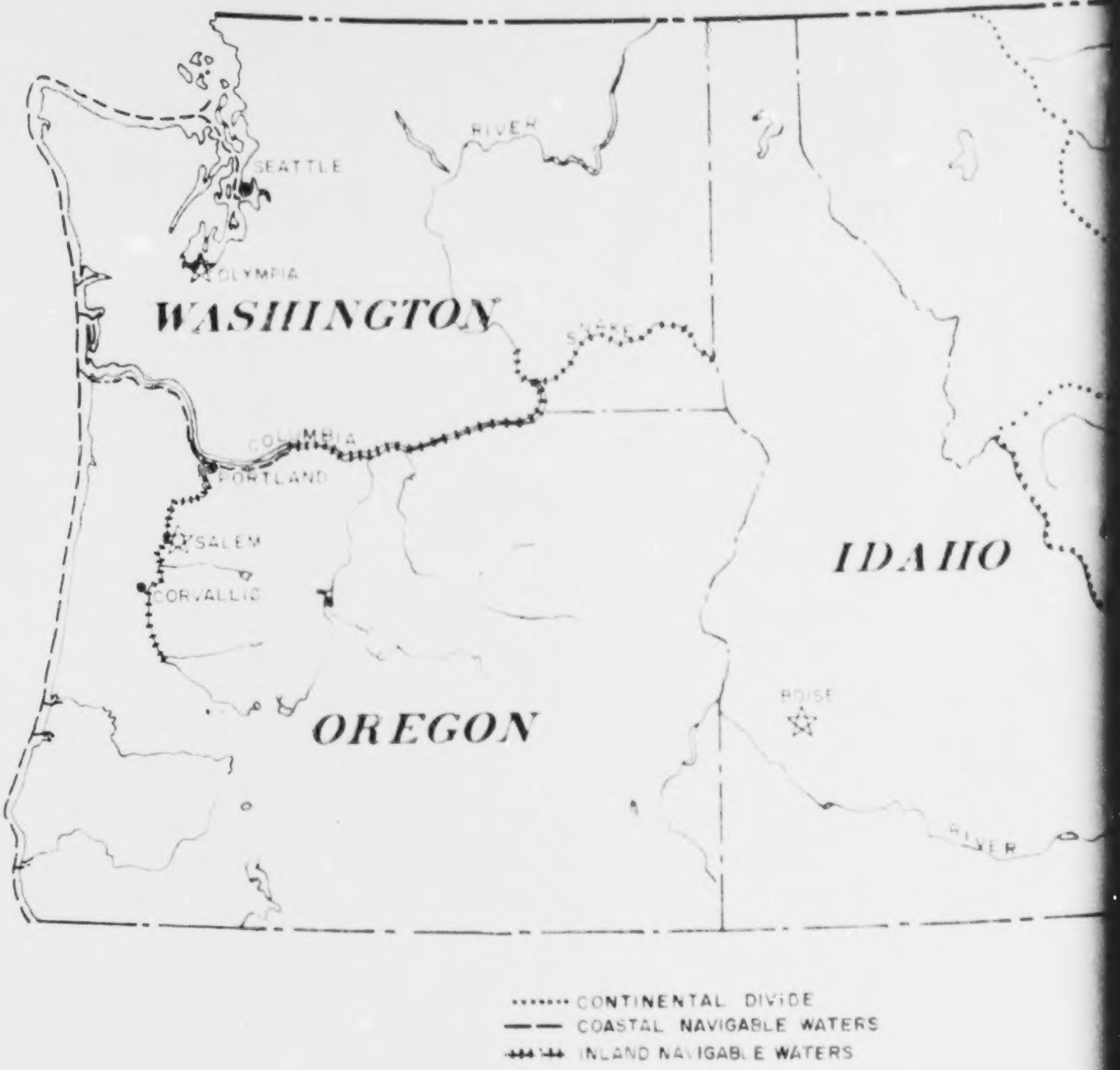
73. Litter and Pollution Panel, Interclub Association of Washington, November 1966

74. Proposed Policy on Sewage and Waste Disposal from Vessels, Division of Environmental Engineering and Food Protection, U.S. P. H. S.

6<

EXHIBIT 1
Page 1

Navigable Coastal and Inland Waterways
Pacific Northwest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CONTINENTAL DIVIDE
COASTAL NAVIGABLE WATERS
INLAND NAVIGABLE WATERS

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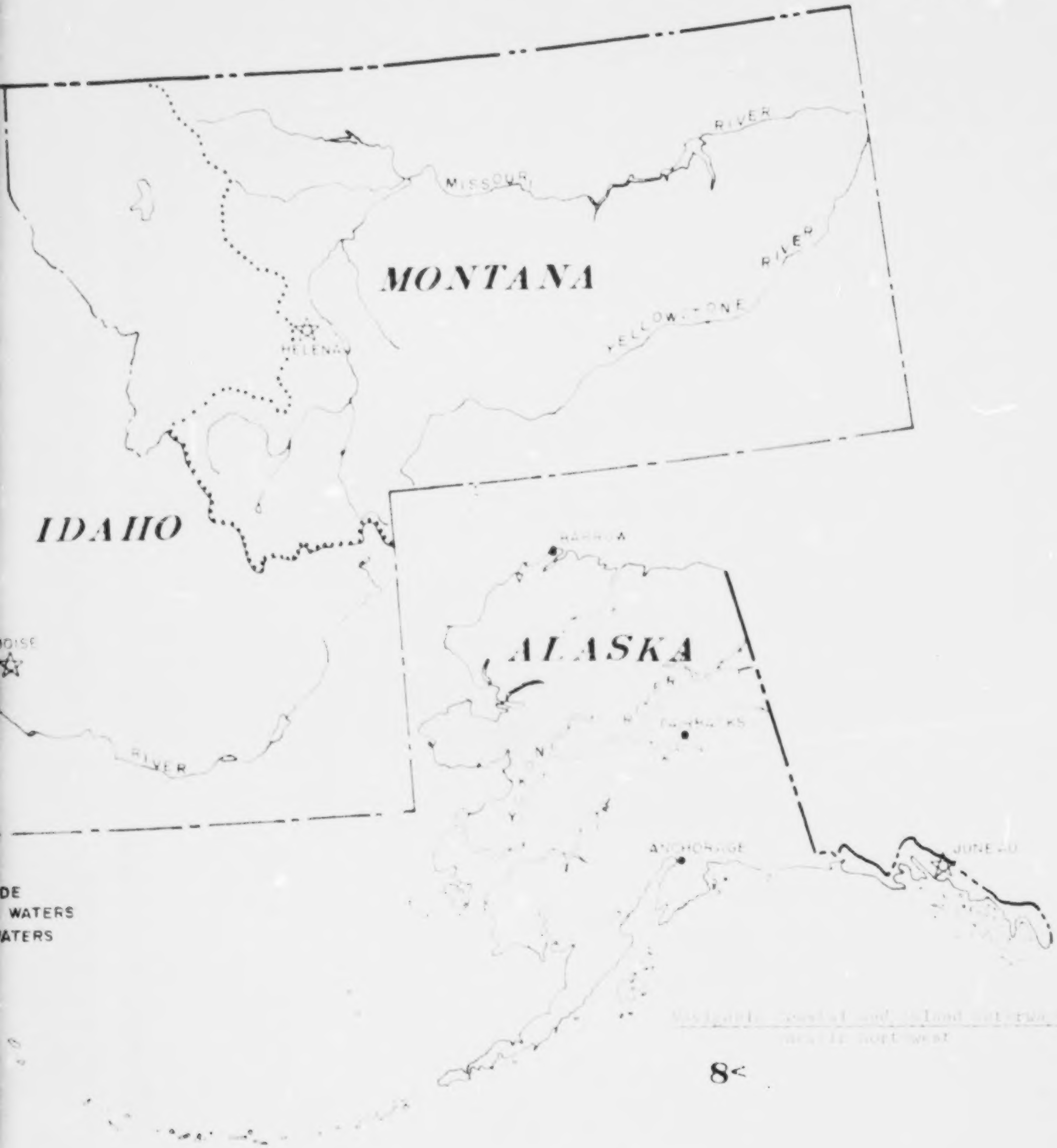
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ANCHORAGE
JUNEAU
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WATERS
ATERS

Navigable Coastal and Inland Waterways
Pacific Northwest

8<

B

EXHIBIT 1
Page 3

Navigable Coastal and Inland Waterways
State of Oregon [5]

EXHIBIT 1
Page 4

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Date: 30 June 1965 Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Alsea Bay	-	-	3.0	None	Flows into Pacific Ocean at Waldport, Oregon.
Alsea River	10.0	None	-	-	Flows into Alsea Bay at Waldport, Oregon.
Big Creek Slough	1.5	None	-	-	Upstream end at Knappa, Oregon.
Big Elk Creek	4.0	None	-	-	Tributary of Yaquina River. Mouth at Elk City, Oregon.
Blind Slough	0.5	None	-	-	Part of Yaquina River. 3 mi. downstream from Toledo, Oregon.
Blind Slough Incl. Gnat Creek	2.5	None	-	-	Tributary of Knappa Slough. Ten miles upstream from Astoria, Oregon.
Booneville Channel	4.0	None	-	-	Tributary of Willamette River. Three miles upstream from Corvallis, Oregon.
Bradbury Slough	3.0	None	-	-	Side channel Columbia River. Five miles north of Clatskanie, Oregon.
Butler Creek	1.0	None	-	-	Tributary of Smith River. Mouth 1 mile from Reedsport, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Calapooya River	0.5	None	-	-	Tributary of Willamette River. Mouth at Albany, Oregon.
Calendar Slough	1.5	None	-	-	Side channel Columbia River. Upstream end 1 mile downstream from Knappa, Oregon.
Cathlamet Bay	-	-	2.0	None	Part of Columbia River. 3 mi. upstream from Astoria, Oregon.
Catching Slough	6.0	None	-	-	Tributary of Coos River. Mouth 2 mi. east of Coos Bay, Oregon.
Chetco Cove	-	-	1.5	None	Bay of Pacific Ocean at Brookings, Oregon.
Chetco River	3.0	0.3	-	-	Flows into Pacific Ocean at Brookings, Oregon.
Clackamas River	0.2	None	-	-	Tributary of Willamette River at Oregon City, Oregon.
Clatskanie River Incl. Beaver Slough	5.0	4.0	-	-	Includes Beaver Slough. Tributary of Columbia River at Clatskanie, Oregon.
Clifton Channel	4.0	None	-	-	Side channel of Columbia River at Clifton, Oregon.
Coalbank Slough	2.0	None	-	-	Tributary of Isthmus Slough at Coos Bay, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Columbia River	215.6	215.6	-	-	To NPP upstream limit. Boundary between Oregon and Washington. Contains Bonneville Lock(mile 145.5) and The Dalles Lock(mile 192.5). See State of Washington also.
Columbia Slough	7.7	7.7	-	-	Tributary of Willamette River. Mouth 2 mi. downstream from Portland north city limit.
Coos Bay	-	-	15.0	15.0	Flows into Pacific Ocean 15 channel miles downstream of Coos Bay, Oregon.
Coos River	14.7	14.7	-	-	Includes South Fork. Flows into Coos Bay at Coos Bay, Oregon.
Cooston Channel	2.0	None	-	-	Part of Coos Bay. Mouth opposite North Bend, Oregon.
Coquille River	36.0	24.0	-	-	Flows into Pacific Ocean at Bandon, Oregon.
Depoe Bay	-	-	0.3	0.3	Cove of Pacific Ocean at Depoe Bay, Oregon.
Depoe Slough	1.0	0.2	-	-	Tributary of Yaquina River at Toledo, Oregon.
Dougherty Slough	1.0	None	-	-	Tributary of Hoquarton Slough, Tillamook, Oregon

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Drift Creek	1.5	None	-	-	Tributary of Alsea River. Mouth 1 mi. east of Waldport, Oregon.
Drift Creek	1.0	None	-	-	Tributary of Siletz Bay. Mouth 1 mile south of Taft, Ore.
Driscoll Slough	0.2	None	-	-	At Westport, Oregon
Duncan Slough	5.0	None	-	-	Tributary of Siuslaw River,5 mi. upstream from Florence, Oregon.
Flesher Slough	0.5	None	-	-	Tributary of Yaquina River. Mouth 5 miles downstream from Toledo, Oregon.
Frantz Creek	0.5	None	-	-	Tributary of Smith River. Mouth 2.0 miles from Reedsport, Oregon.
Gardiner Channel	3.0	1.6	-	-	Part of Umpqua River at Gardiner, Oregon.
Gilbert River	3.0	None	-	-	On Sauvie Island. Tributary of Multnomah Channel.
Goble Channel	3.0	None	-	-	Side channel of Columbia River. Downstream end at Goble, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Government Island Channel	8.0	None	-	-	Part of Columbia River. Channel south of Government Island. Downstream end at International Airport.
Haynes Slough	2.0	None	-	-	Tributary of Coos Bay. Mouth 2 miles north of North Bend, Oregon.
Hoquarton Slough	3.0	None	-	-	Tributary of Tillamook Bay at Tillamook, Oregon.
Hudson Slough	1.0	None	-	-	Tributary of Smith River. Mouth 3 miles NE of Reedsport, Oregon.
Isthmus Slough	9.0	2.0	-	-	Tributary of Coos Bay with mouth at Coos Bay, Oregon.
Joe Ney Slough	1.5	None	-	-	Tributary of South Slough (Coos Bay)Mouth at Charleston, Oregon.
John Day River	3.0	None	-	-	Tributary of lower Columbia River. Mouth 3 miles east of Astoria, Oregon.
Kentuck Slough	0.5	None	-	-	Part of Coos Bay. Mouth opposite North Bend, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
King Slough	1.4	None	-	-	Tributary of Yaquina Bay. Mouth 2 miles SE of Newport, Oregon.
Klatskanine River	2.0	None	-	-	Tributary of Youngs River. Mouth 7 miles SE of Astoria, Oregon.
Knappa Slough	2.0	None	-	-	Tributary of Lower Columbia River. Mouth 9 miles east of Astoria, Oregon.
Lawson Creek	0.5	None	-	-	Tributary of Siuslaw River. Mouth 3 miles upstream from Florence, Oregon.
Lewis and Clark River	8.0	None	-	-	Tributary of Lower Columbia River. Mouth in Youngs Bay 2 miles south of Astoria, Oregon.
McCaffery Slough	1.0	None	-	-	Tributary of Yaquina River. Mouth 3 miles SE of Newport, Oregon.
McIntosh Slough	1.0	None	-	-	Tributary of Umpqua River at Reedsport, Oregon.
Miami Cove	-	-	0.8	0.2	Part of Tillamook Bay at Garibaldi, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Mill Creek	1.0	None	-	-	Tributary of Umpqua River. Mouth 12 miles upstream from Reedsport, Oregon.
Millicoma River	8.5	8.5	-	-	Branch of Coos River. Upstream end at Allegany, Oregon.
Multnomah Channel	21.0	21.0	-	-	Tributary of Columbia River. Upstream end at Portland west city limit.
Neawanna River	2.0	None	-	-	Tributary of Necanicum River at Seaside, Oregon.
Necanicum River	3.0	None	-	-	Flows into Pacific Ocean at Seaside, Oregon.
Nehalem Bay	-	-	4.0	1.0	From Wheeler, Oregon, to Pacific Ocean.
Nehalem River	8.5	None	-	-	Upstream from Wheeler, Oregon, to 1.0 mile above Mohler, Oregon.
Nehalem River (North Fork)	5.0	None	-	-	Tributary of Nehalem River. Mouth 1.0 mile from Nehalem, Oregon.
Nestucca Bay	-	-	3.0	None	Flows into Pacific Ocean 2 mi. south of Pacific City, Oregon

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	Remarks
Nestucca River (Big)	6.0	None	-	-	From 1.0 mile south of Pacific City to Cloverdale, Oregon.
Nestucca River (Little)	1.6	None	-	-	Mouth 2 miles SE of Pacific City, Oregon.
Netarts Bay	-	-	5.0	None	Flows into Pacific Ocean. Mouth at Netarts, Oregon.
North Slough	3.0	None	-	-	Tributary of Coos Bay. Mouth 2 miles north of North Bend, Oregon.
Ollalie Creek	1.0	None	-	-	Tributary of Yaquina River at Toledo, Oregon.
Oregon Slough	6.0	3.8	-	-	Part of Columbia River 1 mile south of Vancouver, Washington.
Otter Slough	1.0	None	-	-	Tributary of Smith River. Mouth 5 miles upstream from Reedsport, Oregon.
Pony Slough	1.2	None	-	-	Tributary of Coos Bay at North Bend, Oregon.
Pacific Ocean	-	-	257.0	None	Navigable water in Pacific Ocean along Oregon Coast.
Pooles Slough	2.0	None	-	-	Tributary of Yaquina River. Mouth 4 miles upstream from Newport, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Port Orford	-	-	0.2	None	Bay on Pacific Ocean at Port Orford, Oregon.
Prairie Channel	10.0	None	-	-	Side channel of Columbia River. Mouth 3 miles east of Astoria, Oregon.
Randolph Slough	2.0	None	-	-	Side channel of Coquille River. 4 miles NE of Bandon, Oregon.
Rogue River	27.0	0.8	-	-	Flows into Pacific Ocean at Gold Beach, Oregon.
Salmon River	3.0	0.5	-	-	Inactive project. Mouth 4 mi. north of Oceanlake, Oregon. Minor waterway.
Sandy River	2.0	None	-	-	Tributary of Columbia River. Mouth across Columbia River from Camas, Washington.
Santiam River	9.0	None	-	-	Tributary at Willamette River. Mouth 23 miles upstream from Salem, Oregon.
Scappoose Bay	-	-	1.6	None	Tributary of Multnomah Channel (Col.River)-1.0 mile from St. Helens, Oregon.
Scholfield Creek	6.0	None	-	-	Tributary of Umpqua River. Mouth at Reedsport, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Siletz Bay	-	-	2.0	None	Flows into Pacific Ocean at Taft, Oregon.
Siletz River	20.0	None	-	-	Flows into Siletz Bay at Kernville, Oregon.
Siuslaw River	19.0	8.0	-	-	Flows into Pacific Ocean 5 miles downstream from Florence, Oregon.
Siuslaw River(North Fork)	2.0	None	-	-	Tributary of Siuslaw River. Mouth 1 mile upstream from Florence, Oregon.
Skipanon Channel	2.6	2.6	-	-	Tributary of Lower Columbia River at Warrenton, Oregon.
Smith River	21.0	21.0	-	-	Tributary of Umpqua River - Upper 6 miles of project is inactive. Mouth is 1 mile north of Reedsport, Oregon.
Smith River(North Fork)	1.0	None	-	-	Minor waterway - tributary of Smith River. Mouth 17 river-miles from Reedsport, Oregon.
South Channel or Burnside Channel	3.0	None	-	-	Side channel of Columbia River Downstream end 3 miles east of Astoria, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	Remarks
South Inlet	1.0	None	-	-	Tributary of Siuslaw River. Mouth 2 miles upstream from Florence, Oregon.
South Slough	5.0	1.0	-	-	Tributary of Lower Coos Bay. Mouth 1 mile north of Charleston, Oregon.
Svenson Slough	2.0	None	-	-	Tributary of Lower Columbia River. Mouth 6 miles east of Astoria, Oregon.
Swan Island Lagoon	1.5	1.5	-	-	Part of Willamette River in City of Portland, Oregon.
Tillamook Bay	-	-	8.0	3.0	Flows into Pacific Ocean 2 mi. west of Garibaldi, Oregon.
Tillamook River	5.0	None	-	-	Tributary of Tillamook Bay at Tillamook, Oregon.
Trask River	2.0	None	-	-	Tributary of Tillamook Bay at Tillamook, Oregon.
Umpqua River	25.0	11.9	-	-	Flows into Pacific Ocean 11 rivermiles from Reedsport, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Walker Island Channel	4.0	None	-	-	Side channel of Columbia River. Upstream end 2 miles downstream of Rainier, Oregon.
Wallace Slough	3.0	None	-	-	Side channel of Columbia River. Upstream end 3 miles north of Clatskanie, Oregon
Walluski River	3.0	None	-	-	Tributary of Youngs River. Mouth 2 miles south of Astoria, Oregon.
Westport Slough	4.5	0.7	-	-	Tributary of Columbia River at Westport, Oregon.
Willamette River	183.2	183.2	-	-	Tributary of Columbia River. Portland to Eugene, Oregon, contains Willamette Falls Locks at mile 26.3. Upstream 51 miles not maintained.
Willamette Slough	1.0	None	-	-	Tributary of Willamette River at Salem, Oregon.
Willanch Slough	0.5	None	-	-	Part of Coos Bay. Mouth opposite North Bend, Oregon.
Wilson River	3.0	None	-	-	Tributary of Tillamook Bay at Tillamook, Oregon.

District: PORTLAND State: OREGON	Rivers, bayous, creeks, canals, intracoastal waterways.		Harbors, bays, lakes and sounds.		Remarks
Waterway	Navigable length in Miles	Miles under authorized project.	Length of main channel or sailing course in miles	Miles under authorized project	
Winchester Bay	-	-	0.6	0.6	Tributary of Umpqua River at Winchester Bay, Oregon.
Yamhill River	7.0	7.0	-	-	Lock has been removed at Mile 7.0. Tributary of Willamette River. Mouth 29 river miles above Oregon City locks.
Yaquina Bay	-	-	4.0	4.0	Flows into Pacific Ocean at Newport, Oregon.
Yaquina River	19.0	9.0	-	-	Tributary of Yaquina Bay. Mouth 3 miles SE of Newport, Oregon.
Youngs Bay	-	-	2.5	2.5	Tributary to Lower Columbia River at Astoria, Oregon. Minor Waterway.
Youngs River	8.3	4.0	-	-	Tributary to Youngs Bay. Mouth at Astoria, Oregon. Minor Waterway.

EXHIBIT 2
Page 1

Lakes and Reservoirs Greater Than Ten Square Miles State of Idaho [15]

	Water Area Square Miles
Pend Oreille Lake	137.5
Bear Lake	136.0
American Falls Reservoir	89.6
Coeur d'Alene Lake	68.8
Cascade Reservoir	42.0
Priest Lake	36.4
Grays Lake	30.9
Black-foot Marsh Reservoir	28.1
Palisades Reservoir	25.0
Brownlee Reservoir	21.4
Lake Walcott	19.2
Lake Lowell	15.3
Island Park Reservoir	12.2
C. J. Strike Reservoir	11.7
Mud Lake	11.7
Henrys Lake	10.0
Total	695.8

EXHIBIT 3
Page 1

Recreational Watercraft
Pacific Northwest
(Excluding Alaska)

EXHIBIT 3
Page 2

Registered Watercraft[20]
State of Idaho
December 31, 1966

Hull Material	Under 16 Ft.		16-less than 26'		26-less than 40'		40-65 Ft.		Over 65 Ft.		Total	
	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd
Wood	117	6376	1246	2908	201	28	1				1565	9312
Steel	7	333	37	72	20	17					64	422
Aluminum	7	8389	53	1567	4	12					64	9968
Plastic	45	7117	399	4405	9	8					453	11530
Other	7	479	2	80	1	2	1				11	561
Total	183	22694	1737	9032	235	67	2				2157	31793

EXHIBIT 3
Page 3

Registered Watercraft
State of Montana[21]
June 30, 1966

	Total	Under 16'	16'-26'	26'-40'	40'-65'
Outboard	9311	6209	3081	21	0
Inboard	378	34	293	48	3

Other Registered Watercraft

	Comb. Inboard-Outboard	Jet Boats	Sail Boats
Under 16'	11	5	1
16' and Over	200	16	1

EXHIBIT 3
Page 4

Registered Watercraft
State of Oregon [19]
December 31, 1966

Hull Material	Under 16 Ft.		16-less than 26'		26-less than 40'		40-65 Ft.		Over 65 Ft.		Total	
	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd	InBrd	OutBrd
Wood	255	23298	2154	5393	1399	69	90	1	1	---	3899	28761
Steel	37	146	164	49	181	19	16	---	---	---	398	214
Aluminum	6	9974	113	749	13	4	4	---	---	---	136	10727
Plastic[a]	191	18563	1044	4071	42	3	5	---	---	---	1282	22637
Other												
TOTAL	489	51260	3475	10262	1635	95	115	1	1	---	5715	62339

Total valid state certificates outstanding to date . . . 68,054

a - Including Fiberglass

EXHIBIT 3
Page 5

Estimated Watercraft
State of Washington 22
June, 1965

Type	Wood	Steel	Aluminum	Fiberglass	Other	Unknown	Total
Inboards	17408	1579	1039	0	0	0	20026
Outboards	62137	877	28890	37603	0	0	129507
Sailboat	3772	0	877	877	0	0	5526
Others	52992	0	4458	6124	4914	0	68488
TOTAL	136309	2456	35264	44604	4914	0	223547

Length	Wood	Steel	Aluminum	Fiberglass	Other	Unknown	Total
To-13.50	64448	0	25432	12621	4914	0	107415
To-14.50	24792	0	9042	5764	0	0	39598
To-16.50	17765	0	0	14820	0	0	32585
To-999.90	27800	2456	790	10523	0	0	41569
Unknown	1504	0	0	876	0	0	2380
TOTAL	136309	2456	35264	44604	4914	0	223547

Estimated Motorboats
State of Washington[22]
June 1965

Horsepower	Length To 13-6	Length To 14-6	Length To 16-6	Length 16-7+	Length Unknown	All Length
To- 4.00	18229	2517	1260	0	0	22006
To- 7.00	12186	919	885	0	0	13990
To- 10.00	14970	4861	2310	1991	721	24853
To- 15.00	2059	1679	3493	0	0	7231
To- 20.00	1277	4653	2115	0	0	8045
To- 30.00	0	3627	2495	1379	0	7501
To- 45.00	3041	6420	8160	877	0	18498
To- 55.00	0	0	6571	6198	0	12769
To- 65.00	877	0	796	4287	0	5960
To- 75.00	0	1973	0	7903	876	10752
To-100.00	0	0	843	4419	0	5262
To-150.00	0	0	0	6333	783	7116
To-200.00	0	0	0	3036	0	3036
To-300.00	0	0	0	1637	0	1637
To-400.0	0	0	0	0	0	0
To-999.90	0	0	0	877	0	877
TOTAL	52639	26649	28928	38937	2380	149533

EXHIBIT 4
Page 1

Supporting Shore Facilities for Pleasure Craft
State of Oregon

EXHIBIT 4
Page 2

Summary of Supporting Shore Facilities for Pleasure Craft State of Oregon [a]

Water Type	No. of Waters	No. of Launch Facilities	No. of Service and Fueling Facilities	No. of Boat Moorages	No. of Waters Without Restrooms	No. of Shore Restrooms
Coastal	34	127	53	50	25	70
Inland Rivers	26	139	10	8	9	64
Natural Lakes	87	140	19	24	16	105
Artificial Impoundments						
U. S. Corps Engineers	20	106	33	34	1	91
U. S. Bureau of Reclamation	18	38	10	4	6	30
Others	46	68	11	10	19	47
Totals	231	618	136	130	76	407

[a] - 4, 6, 7, 8, 9, 28, 29, 30, 31, 32, 33, 34.

EXHIBIT 4
Page 3

Supporting Shore Facilities for Pleasure Craft
Natural Lakes
State of Oregon [6,7]

Name	Acres Area	Ramps	Moorages	Gas & Oil	Rest-Rooms
Coffenbury Lake	50	1	--	--	1
Sunset Lake	175	1	--	--	1
Crabapple Lake	?	1	--	--	1
Cullaby	300	2	--	--	2
Lost Lake (Hood River City)	265	1	--	--	--
Sturgeon Lake	3500	1	--	--	1
Lake Lytle	65	1	--	--	1
Devils Lake (Lincoln City)	700	6	--	--	3
Eckman Lake	75	1	--	--	--
Triangle Lake	7	2	1	1	2
Carlton Lake	300	1	--	--	1
Elk Lake	66	1	--	--	1
Freeway Lake #1		1	--	--	1
Freeway Lake #2		1	--	--	1
Mission Lake	29	1	--	--	--
McBee Lake	33	1	--	--	--
Big Lake	226	1	--	--	1
Breitenbush Lake	48	1	--	--	1
Clear Lake	152	3	--	--	3

Name	Acres Area	Ramps	Moorages	Gas & Oil	Rest-Rooms
Frog Lake	14	1	--	--	1
Little Houston Lake		1	--	--	--
Lost Lake (Lincoln City)	30	1	--	--	1
Monan Lake	86	1	--	--	--
Olallie Lake	175	1	--	1	1
Suttle Lake	256	4	--	1	4
Trillium Lake	30	1	--	--	1
Antharg Lake	20	1	--	--	1
Grande Ronde Lake	15	1	--	--	1
Magone Lake	45	1	--	--	1
Morgan Lake	60	1	--	--	1
Fish Lake (Baker City)	60	1	--	--	1
Olive Lake	145	1	--	--	1
Bradley Lake	30	1	--	--	1
Crater Lake	25	1	--	--	1
Cleawox Lake	8	1	--	--	1
Cel Lake	350	1	--	--	1
Elboro	6	1	--	--	1
Empire	50	2	--	--	2
Loon	?	2	1	--	2
Lost (Lane City)	12	1	--	--	1
Mercer	10	2	--	--	--
Munsel	100	1	--	--	--
Saunders	55	1	--	--	--

EXHIBIT 4
Page 5

Name	Acres Area	Ramps	Moorages	Gas & Oil	Rest-Rooms
Siltcoos	3000	11	8	8	4
Sutton	10	1	--	--	--
Tahkenitch	10	4	--	--	1
Tenmile	2200	2	1	2	2
Woahink	1800	2	1	1	1
Diamond	3000	5	1	1	4
Gold	40	1	--	--	1
Odell	3379	7	2	3	5
Summit	688	1	--	--	1
Waldo	6000	1	--	--	1
Big Lava	368	1	--	--	1
Cultus	1122	2	--	--	2
Davis	3720	3	--	--	2
Devils (Deschutes City)	26	1	--	--	1
East	1008	3	--	--	3
Elk	400	3	1	1	3
Hosmer (Mud)	112	2	--	--	2
Fish	26	1	--	--	1
Little Cultus	165	1	--	--	1
Little Lava	120	1	--	1	1
North Twin	102	1	--	--	1
Paulina	1300	2	--	1	2
South Twin	110	1	--	1	1
Sparke	385	1	--	--	--

EXHIBIT 4
Page 6

Name	Acres Area	Ramps	Moorages	Gas & Oil	Rest-Rooms
Three Creeks	70	1	--	--	1
Todd	60	1	--	--	1
Delintment	40	1	--	--	1
Bolan	11	1	--	--	1
Floras	350	2	--	--	1
Ganisan	250	2	--	--	--
Selmac	160	1	1	1	1
Lake O'Woods	1113	3	--	1	3
Squaw Lake (Jackson City)	2	1	1	1	1
Agency Lake		1	1	1	1
Campbell	30	1	--	--	1
Cottonwoods Meadows	38	1	--	--	1
Deadhorse	70	1	--	--	1
Dog	210	1	--	--	--
Heart	20	1	--	--	--
Squaw Lake (Lake City)		1	--	--	--
Mule Lake		1	--	--	--
Fish (Harney City)	95	1	--	--	1
Loften	50	1	--	--	2
Miller	600	1	--	--	1

EXHIBIT 4
Page 7

Supporting Shore Facilities for Pleasure Craft
Artificial Impoundments
State of Oregon [a] 1

Name	Area Acres	Ramps	Fuel	Moorages	Rest-Rooms	Code
Kingsley Res.	60	1	--	--	--	C
McKay Res.	1286	1	--	--	--	B
Detroit	3580	7	2	--	6	A
Estacada	60	1	--	--	1	C
North Fork	350	1	1	1	1	C
Smith River Res.	170	1	--	--	1	C
Trail Bridge	120	1	--	--	1	C
Badger	?	1	--	--	--	C
Bibby	16	1	--	--	--	C
Carmen	?	1	--	--	1	C
Harriet	25	1	--	--	1	C
Haystack	25	2	--	--	2	B
Lake Billy Chinook	2500	3	--	--	3	C
Lake Simtustus	550	1	1	1	1	C
Ochoco	1080	2	1	--	1	B
Rock Creek	17	2	1	--	2	C
Higgins	100	1	--	--	1	C
Unity	926	2	--	--	2	B
Balm Creek	300	1	1	--	1	C
Malhuer	1300	2	--	--	2	C

[a] - 7, 8, 28, 29, 30, 31, 32, 33

EXHIBIT 4
Page 8

Name	Area Acres	Ramps	Fuel	Moorages	Rest-Rooms	Code
Timothy Meadows	1400	3	--	--	3	C
Bull Prairie	25	2	--	--	2	C
Rowe Creek	30	1	--	--	--	C
Thief Valley	740	1	--	--	1	B
Rock Creek	384	1	--	--	--	C
Lake Ben Morrow	385	1	--	--	--	C
Silver Creek	630	1	--	--	--	C
Cottage Grove	1160	2	--	--	2	A
Dexter	1025	2	1	1	2	A
Doreng	1835	3	1	1	3	A
Fall Creek	?	1	--	--	1	A
Fern Ridge	9360	7	3	3	7	A
Hills Creek	2735	2	--	--	2	A
Lemolo	500	5	--	--	4	C
Lookout Point	4440	4	--	--	4	A
Tokatee	200	1	--	--	1	C
Crane Prairie	4940	4	2	2	4	B
Cresent Lake	3970	2	--	--	1	B
Duncan	40	1	--	--	--	C
Prineville	2990	6	--	--	5	B
Wickiup	10600	6	1	--	6	B
Chickahominy	500	1	--	--	1	C
Moon		1	--	--	--	C
Warm Springs	4440	1	--	--	--	B
Cougar	1200	1	--	--	1	A

Name	Area Acres	Ramps	Fuel	Moorages	Rest-Rooms	Code
Bully Creek	1000	1	--	--	--	B
Owyhee	13900	3	2	--	3	B
Emigrant Lake	801	2	2	--	2	B
Fish Lake	410	1	1	1	1	B
Fourmile Lake	900	1	1	--	1	B
Clear Lake	380	--	--	--	--	C
Howard Prairie	1960	2	1	1	2	B
Hyatt Prairie	880	2	1	1	2	C
Willow Creek	320	2	1	1	1	C
Ana	50	1	--	--	--	C
Gerber	3845	2	1	--	2	B
Lost River	?	1	--	--	--	B
Withers	?	1	--	--	--	C
Cottonwood	390	1	--	--	--	C
Drews	4540	1	--	1	1	C
Sids	50	1	--	--	--	C
Taft Miller		1	--	--	--	C
Priday	100	1	--	--	--	C
Krumbo	125	1	--	--	1	C
Antelope	2880	1	--	--	1	C
Cold Springs	1550	1	--	--	--	B
Wasco	557	1	--	--	--	B
Walton Lake	25	1	--	--	--	C
Thompson Valley	1900	2	--	--	--	C
Agency Valley	1900	1	1	1	1	B

EXHIBIT 4
Page 10

Name	Area Acres	Ramps	Fuel	Moorages	Rest-Rooms	Code
Big Cliff	146	--	--	--	--	A
Upper Klamath Lake	90800	8	1	3	7	C
Willow River No. 3	1240	--	--	--	--	C
Wallowa Lake	1800	2	1	1	1	C
Upper Cow	1000	1	--	--	2	C
Foster	1220	1	--	--	2	A
Green Peter	3720	1	--	--	2	A
Bonneville	21500	5	2	3	4	A
The Dalles	13550	7	--	--	7	A
John Day	49300	22	9	9	18	A
McNary	37900	16	5	7	6	A
Ice Harbor [a]	9200	6	2	2	5	A
Lower Monumental [a] [b]	6590	6	1	1	6	A
Little Goose [a] [b]	10025	6	3	3	6	A
Lower Granite [a] [b]	9000	7	4	4	7	A

Code Table A = Corps of Engineer Reservoir

B = Bureau of Reclamation Reservoir

C = Other

a = Reservoir located on the Snake River in the State of Washington

b = Under Construction

Supporting Shore Facilities for Pleasure Craft
Inland Rivers
State of Oregon [6,7,34]

Name	Ramp	Fuel	Moorage	Restrooms
Nehalem River	2	--	--	--
Wilson River	1	--	--	--
Clackamas River	3	--	--	2
Sandy River	3	--	--	3
Grande Ronde River	4	--	--	--
Wallowa River	2	--	--	--
Alsea River	13	4	4	3
Nestucca River	5	--	--	2
Siletz River	4	1	1	2
Santiam River	2	1	--	1
Yamhill River	1	--	--	1
Deschutes	14	1	--	10
Coquille	1	--	--	--
Coquille River North Fk.	1	--	--	--
Coos River	1	--	--	--
Lake Creek (Off Siuslaw R.)	2	--	--	1
Siuslaw River	6	--	--	3
Smith River	1	--	--	--
Umpqua River	6	--	--	2
McKenzie River	15	--	--	5

Name	Ramp	Fuel	Moorage	Restrooms
Clatskanie River	1	1	--	1
Umpqua River North Fk.	3	--	--	2
Rogue River	30	1	1	17
Wood River	1	--	--	1
Willamette River	16	1	1	7
Willamette River Mid. Fk.	1	--	--	1

EXHIBIT 4
Page 13

Supporting Shore Facilities for Pleasure Craft
Coastal Waters
State of Oregon [6,7,34]

Name	Ramp	Fuel	Moorage	Restrooms
John Day River	1	--	--	--
Klaskanine River	1	--	--	--
Skipanon River	2	1	--	1
Youngs River	1	1	--	--
Necanicum	1	--	--	--
Nehalem Bay	4	2	--	3
Netarts Bay	2	--	1	2
Tillamook Bay	4	2	--	3
Alsea Bay	2	1	1	2
Beaver Creek	1	--	--	1
Depoe Bay	2	--	1	1
Little Nestucca River	1	--	--	1
Nestucca Bay	3	--	--	1
Nestucca River	1	--	--	1
Cape Kieanda (Pacific Ocean)	1	--	--	1
Siletz Bay	3	3	3	3
Yachats River	1	--	--	--
Yaquina Bay	7	5	5	6
Coquille Bay	2	--	1	1
Coquille River	2	--	--	--

Name	Ramp	Fuel	Moorage	Restrooms
Coos Bay	6	2	1	1
Sunset Bay (Pacific Ocean)	1	--	--	1
Siuslaw Bay	5	4	4	4
Siuslaw River	4	4	4	4
Smith Tidewater	1	--	--	1
Umpqua Tidewater	2	2	2	--
Winchester Bay	1	--	--	--
Chetco Bay	3	3	3	2
Rogue River	3	2	2	1
Multnomah Cahnnel	10	5	5	6
Willamette River	13	4	2	4
Columbia River	33	11	13	16

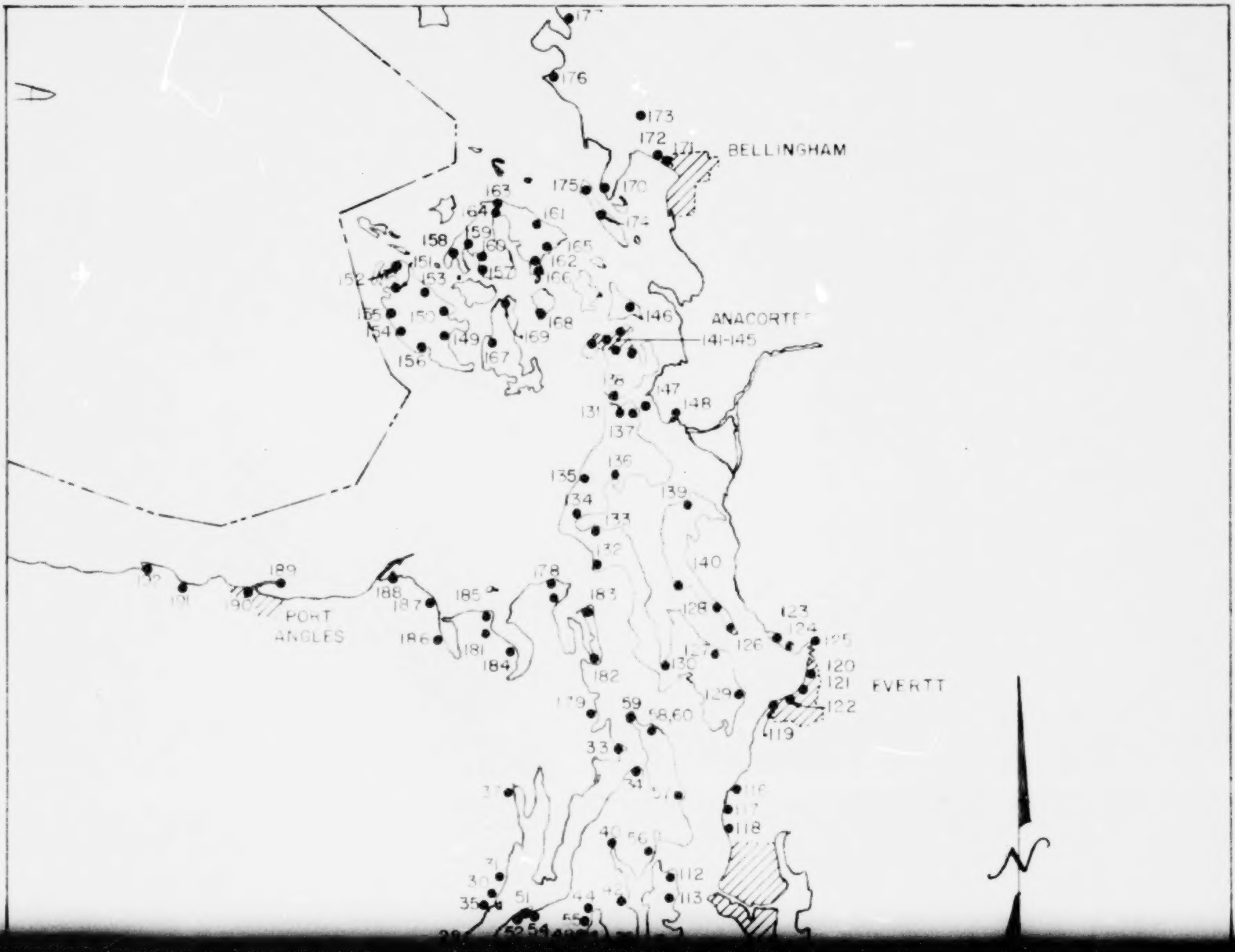
EXHIBIT 5
Page 1

Supporting Shore Facilities for Pleasure Craft
State of Washington

EXHIBIT 5
Page 2

Supporting Shore Facilities for Pleasure Craft State of Washington [26,70]

	No. of Sites	No. of Launch Facilities	No. of Moorages	No. of Fueling Facilities
Puget Sound	192	123	124	115
State Marine and Recreation Parks	42	31	23	10
TOTALS	234	154	147	125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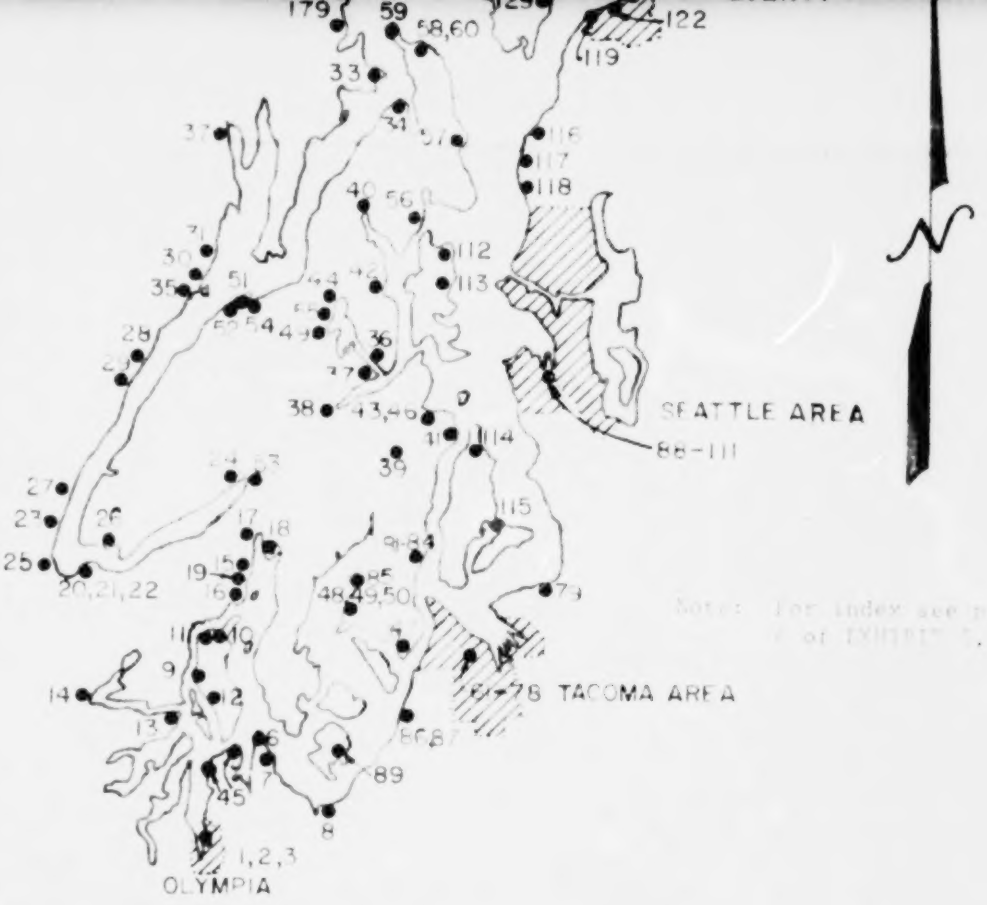
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43,46
SEATTLE AREA
88-111
114
39
24
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115
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20,21,22
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48,49,50
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61-78 TACOMA AREA
86,87
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Note: For index see page 4, 5, and 6 of EXHIBIT 5.

Supporting Shore Facilities for Pleasure Craft
Puget Sound
State of Washington

EXHIBIT 5
Page 3

B

EXHIBIT 5
Page 4

Supporting Shore Facilities for Pleasure Craft
Puget Sound
State of Washington [26]

Location No.	Launching Ramp	Moorage
1	X	X
2	X	X
3	X	X
4	X	X
5	X	
6	X	
7	X	
8	X	
9	X	
10		X
11	X	
12	X	
13	X	
14	X	X
15	X	X
16		X
17	X	
18	X	
19	X	
20	X	
21	X	X
22	X	
23		X
24	X	
25	X	
26		X
27	X	X
28	X	X
29		X
30		X
31	X	
32	X	X
33	X	X
34		X
35	X	X
36		X
37	X	
38		X
39	X	
40	X	X
41		X
42		
43	X	
44	X	
45	X	
46	X	
47	X	
48	X	
49	X	
50	X	X
51	X	
52		X
53	X	
54	X	
55	X	
56	X	
57		X
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59	X	X
60		X
61	X	X
62		X
63		X
64		X
65		X
66		X
67		X
68		X
69		X
70		X
71		X
72	X	X
73		X
74		X
75	X	
76	X	X
77	X	
78	X	

EXHIBIT 5
Page 5

Location No.	Launching Ramp	Moorage
79		X
80	X	X
81		X
82		X
83	X	
84	X	
85		X
86		X
87	X	
88	X	
89	X	X
90	X	X
91	X	X
92	X	X
93		X
94	X	
95	X	X
96	X	X
97	X	X
98	X	
99	X	X
100		X
101		X
102		X
103	X	
104	X	
105	X	X
106	X	X
107	X	X
108		X
109		X
110		X
111	X	
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125	X	X
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129	X	
130	X	
131	X	X
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133	X	X
134	X	
135	X	
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139	X	
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142		X
143		X
144		X
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147	X	X
148		X
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150		X
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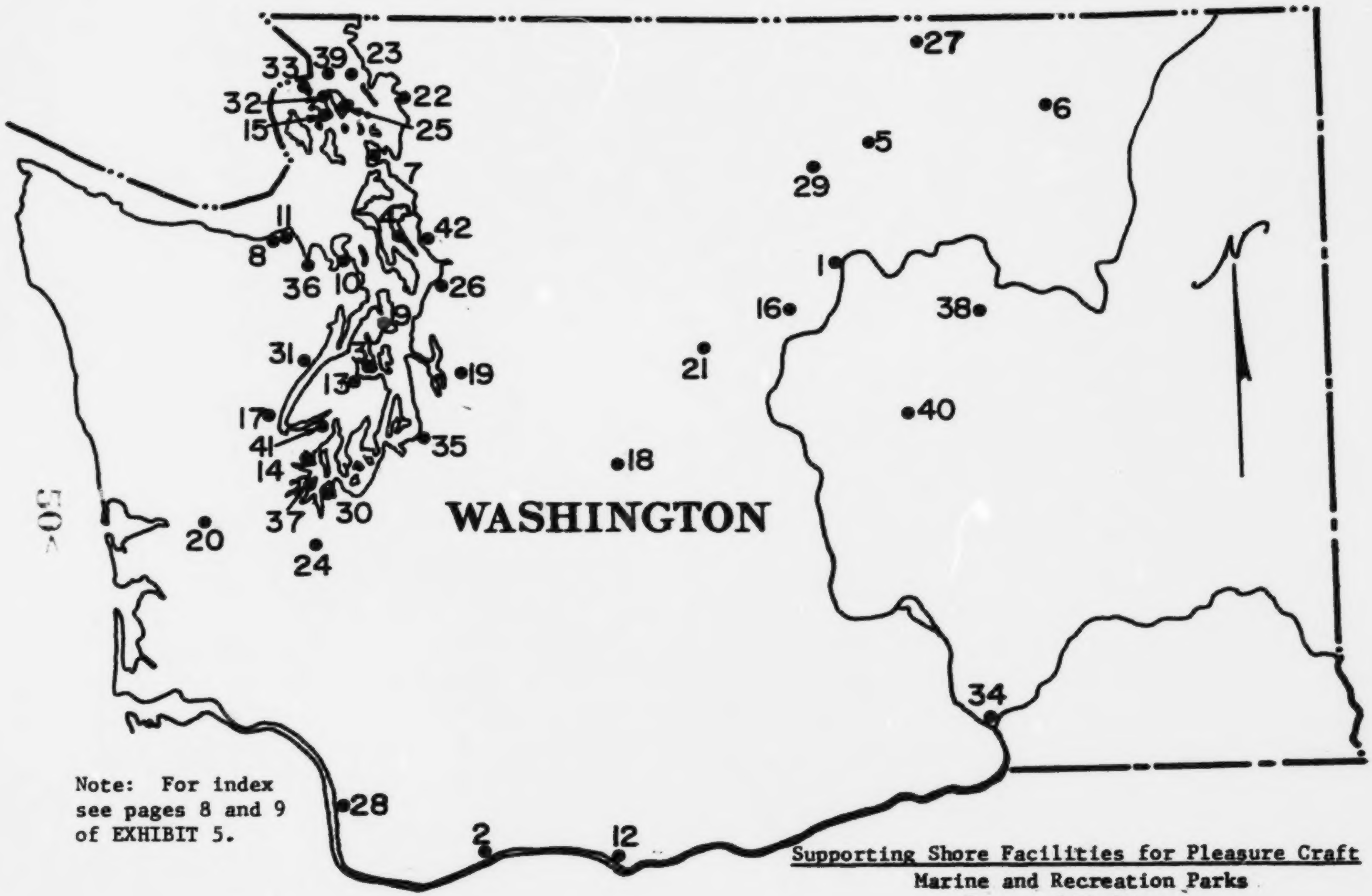
157		X
158		X
159	X	X
160		X
161	X	X
162	X	X
163	X	X
164		X
165	X	
166	X	X
167	X	X
168	X	
169	X	X
170	X	X
171	X	
172		X

EXHIBIT 5
Page 6

Location No.	Launching Ramp	Moorage	Location No.	Launching Ramp	Moorage
173		X			
174	X	X			
175		X			
176	X	X			
177	X	X			
178	X	X			
179	X	X			
180		X			
181		X			
182	X				
183	X	X			
184	X	X			
185	X				
186	X				
187		X			
188		X			
189	X	X			
190		X			
191		X			
192	X	X			

EXHIBIT 5
Page 7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Note: For index
see pages 8 and 9
of EXHIBIT 5.

Supporting Shore Facilities for Pleasure Craft
Marine and Recreation Parks
State of Washington

EXHIBIT 5
Page 8

Supporting Shore Facilities for Pleasure Craft
Marine and Recreation Parks[70]
State of Washington

No.	Name	Marine[a] Park	Recreation Park	Boat Launch	Mooring Floats-Buoys
1	Alta Lake		X	F	
2	Beacon Rock		X	F	F
3	Blake Island	X			SW
4	Camano Island		X	SW	
5	Conconully		X	F	
6	Curlew Lake		X	F	
7	Deception Pass		X	F-SW	SW
8	Dungeness		X	SW	
9	Fay-Bainbridge		X	SW	
10	Fort Flagler		X	SW	SW
11	Graveyard Spit	X			SW
12	Horsethief Lake		X	F	
13	Illahee		X	SW	SW
14	Jarrel Cove	X			SW
15	Jones Island	X			SW
16	Lake Chelan		X	F	F
17	Lake Cushman		X	F	
18	Lake Easton		X	F	
19	Lake Sammamish		X	F	
20	Lake Sylvia		X	F	
21	Lake Wenatchee		X	F	
22	Larrabee		X	SW	
23	Matia Island	X			SW
24	Millersylvania		X	F	
25	Moran		X	F	F
26	Mukilteo		X	SW	SW
27	Osoyoos Lake		X	F	
28	Paradise Point		X	F	F
29	Pearrygin Lake		X	F	
30	Penrose Point		X		SW
31	Pleasant Harbor	X			SW
32	Prevost Harbor	X			SW
33	Reid Harbor	X			SW
34	Sacajawea		X	F	F
35	Saltwater		X	SW	
36	Sequim Bay		X	SW	SW
37	Squaxin Island	X			SW
38	Steamboat Rock		X	F	
39	Sucia Island	X			SW

No.	Name	Marine* Park	Recreation Park	Boat Launch	Mooring Floats-Buoys
40	Sun Lakes		X	F	F
41	Twanoh		X	SW	SW
42	Wenberg (On Lake Goodwin)		X	F	

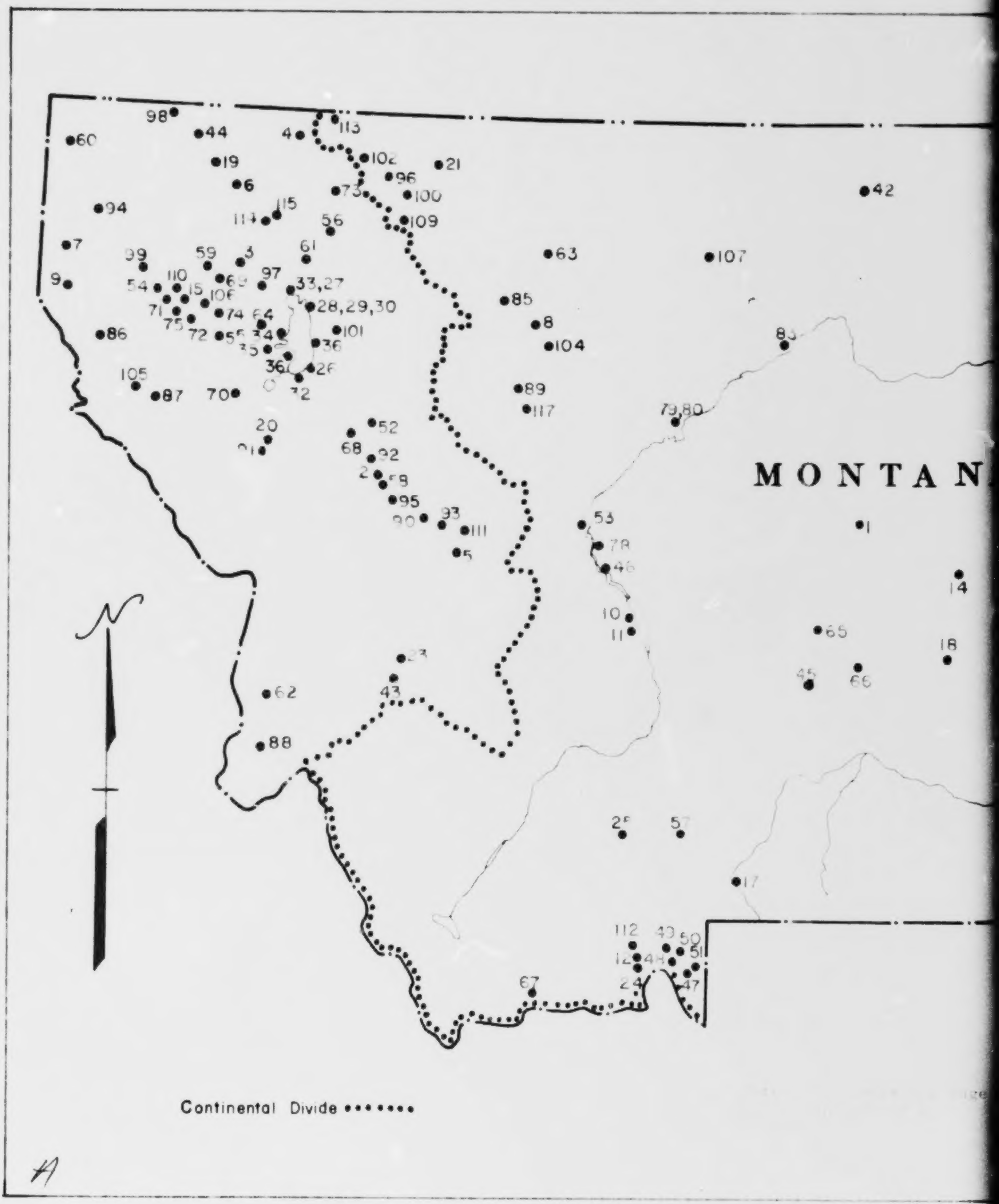
---

[a] In addition to the 10 Marine Parks and 32 Recreational Parks offering marine facilities listed in the chart above, 17 small islands are owned or leased by the State Parks Department for use by boaters. These areas are located in the San Juan Islands, two of which are developed, and 15 undeveloped, but all offer opportunities for picnicking, camping, and exploration.

F - Freshwater
SW - Saltwater

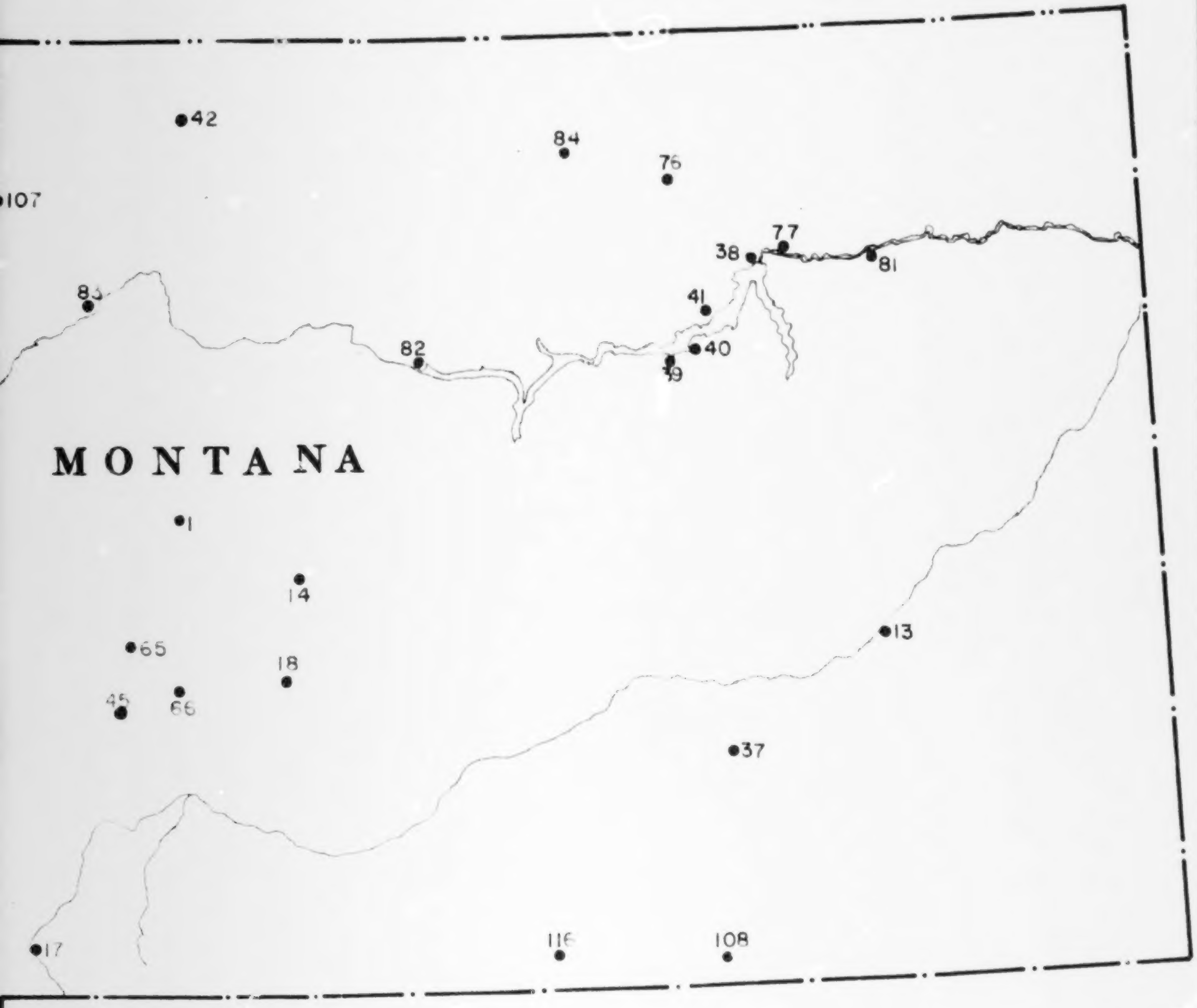
EXHIBIT 6
Page 1

Supporting Shore Facilities for Pleasure Craft
State of Montana


MONTAN
N
Continental Divide ••••••
98
44
4
113
60
19
6
102
96
21
73
100
94
115
114
56
109
42
7
99
59
3
61
63
107
9
54
110
15
69
97
33,27
106
28,29,30
85
71
75
74
64
8
72
55
34
101
86
35
36
104
83
105
36
26
70
87
32
89
117
79,80
20
52
68
92
2
58
95
93
90
111
53
5
78
46
1
14
10
11
65
18
23
45
66
43
62
88
25
57
17
112
49
50
12
48
51
24
47
67

A

EXHIBIT 6
Page 2


●42
84
76
●107
77
38
81
83
41
82
●40
39
MONTANA
●1
14
●65
18
45
66
●13
●37
●17
116
108

[illegible]
[illegible]
State of Montana

Note: [illegible]

B

EXHIBIT 6
Page 3

Supporting Shore Facilities for Pleasure Craft
State of Montana [17]

No.	Water Body	Boating Area	Ramp	Hoist	Gas & Oil
1	Ackley Lake	241 Acres	X		
2	Alva Lake	300 Acres	X		
3	Ashley Lake	4 Sq. mi.	X		
4	Bowman Lake	4 Sq. mi.	X		
5	Browns Lake	500 Acres	X		
6	Bull Lake	117 Acres	X		
7	Bull Lake	4 Sq. mi.	X		X
8	Bynum Reservoir	6 Sq. mi.	X		
9	Cabinet Reservoir	12 Sq. mi.	X		
10	Canyon Ferry Reservoir	55 Sq. mi.			X
11	Canyon Ferry Reservoir	55 Sq. mi.	X		X
12	Cliff Lake	4 Sq. mi.	X		
13	Cook Lake	5 Acres	X		
14	Crystal Lake				
15	Crystal Lake	350 Acres	X		X
16	Cooney Reservoir	862 Acres	X		
17	Dailey Lake	300 Acres			
18	Deadman Basin	8 Sq. mi.	X		
19	Dickey Lake	622 Acres	X		
20	Dry Forks Reservoir	200 Acres	X		
21	Duck Lake	4 Sq. mi.	X		
22	Durand Reservoir	3 Sq. mi.	X		
23	Echo Lake	300 Acres	X		
24	Elk Lake	480 Acres	X		
25	Ennis Lake	6 Sq. mi.			
26	Flathead Lake	190 Sq. mi.		X	X
27	Flathead Lake	190 Sq. mi.	X		
28	Flathead Lake	190 Sq. mi.	X	X	X
29	Flathead Lake	190 Sq. mi.	X	X	X
30	Flathead Lake	190 Sq. mi.	X		
31	Flathead Lake	190 Sq. mi.			
32	Flathead Lake	190 Sq. mi.	X	X	X
33	Flathead Lake	190 Sq. mi.	X		X
34	Flathead Lake	190 Sq. mi.	X		
35	Flathead Lake	190 Sq. mi.	X		
36	Flathead Lake	190 Sq. mi.	X		
37	Flint Creek Reservoir	440 Acres	X		
38	Fort Peck Reservoir	756 Sq. mi.	X		
39	Fort Peck Reservoir	756 Sq. mi.	X		
40	Fort Peck Reservoir	756 Sq. mi.	X		

EXHIBIT 6
Page 4

No.	Water Body	Boating Area	Ramp	Hoist	Gas & Oil
41	Fort Peck Reservoir	756 Sq. mi.	X		
42	Fresno Reservoir	22 Sq. mi.	X		
43	Georgetown Lake	5 Sq. mi.	X		X
44	Glenn Lake	334 Acres	X		
45	Harris Lake	500 Acres	X		
46	Hauser Lake	10 mi.	X		X
47	Hebgen Lake	20 sq. mi.	X		X
48	Hebgen Lake	20 Sq. mi.	X		X
49	Hebgen Lake	20 Sq. mi.	X		X
50	Hebgen Lake	20 Sq. mi.	X		X
51	Hebgen Lake	20 Sq. mi.	X		
52	Holland Lake	1000 Acres	X		X
53	Holter Reservoir	6 Sq. mi.	X		
54	Horseshoe Lake	250 Acres	X		
55	Hubbart Reservoir	700 Acres	X		
56	Hungry Horse Reservoir	36 Sq. mi.	X		
57	Hyalite Lake	220 Acres	X		
58	Inez Lake	300 Acres	X		
59	Island Lake	1000 Acres	X		
60	Kilbrennan Lake	225 Acres	X		X
61	Lake Blaine	400 Acres	X		X
62	Lake Como	936 Acres	X		
63	Lake Francis	9 Sq. mi.	X		
64	Lake Mary Ronan	1200 Acres	X		X
65	Lake Suterlin	500 Acres	X		
66	Lebo Lake	500 Acres	X		
67	Lima Reservoir	20 Sq. Mi.	X		
68	Lindberg Lake	3 Sq. mi.	X		X
69	Little Bitterroot Lake	5 Sq. mi.	X		X
70	Lone Pine Reservoir	200 Acres	X		
71	Loon Lake	400 Acres	X		
72	Lower Thompson Lake	2 Sq. mi.	X		
73	McDonald Lake	10 Sq. mi.	X		
74	McGregor Lake	3 Sq. mi.	X		X
75	Middle Thompson Lake	3 Sq. mi.	X		
76	Milk River	30 miles	X		
77	Missouri River	5 Sq. mi.			
78	Missouri River	20 miles	X	X	X
79	Missouri River	20 miles	X		
80	Missouri River	20 miles	X		
81	Missouri River	20 Sq. mi.	X		
82	Missouri River	25-50 miles	X		
83	Missouri River	25-300 miles			X
84	Nelson Reservoir	7 sq. mi.	X		
85	Nilan Reservoir	600 Acres	X		
86	Noxon Reservoir		X		
87	Noxon Reservoir		X		
88	Painted Rocks Lake		X		
89	Pishkun Reservoir	58 Sq. mi.	X		

EXHIBIT 6
Page 5

No.	Water Body	Boating Area	Ramp	Hoist	Gas & Oil
90	Placid Lake				
91	Rainbow Lake	80 Acres	X		
92	Rainey Lake	60 Acres	X		
93	Salmon Lake		X		
94	Savage Lake	80 Acres	X		
95	Seeley Lake	3 Sq. mi.	X		
96	Sherburne Lake	4 Sq. mi.	X		
97	Smith Lake	1200 Acres	X		
98	Sophia Lake	228 Acres	X		
99	Spar Lake	320 Acres	X		
100	St. Mary Lake	10 Sq. mi.	X		
101	Swan Lake		X		
102	Swift Current Lake	300 Acres	X		
103	Tally Lake	3 Sq. mi.	X		
104	Teton River	980 Acres	X		
105	Thompson Falls Reservoir	7 Miles	X		
106	Thompson Lakes	6 Sq. mi.	X		
107	Tiber Reservoir	75 Sq. mi.	X		
108	Tongue River Reservoir	6 Sq. mi.	X		
109	Two Medicine Lake	600 Acres	X		
110	Upper Thompson Lake	2 Sq. mi.	X		
111	Upsata Lake	90 Acres	X		
112	Wade Lake	1400 Acres	X		
113	Waterton Lake	6 Sq. mi.	X		
114	Whitefish Lake	10 Sq. mi.	X		X
115	Whitefish Lake	10 Sq. mi.	X		X
116	Willow Creek Reservoir	250 Acres	X		
117	Willowcreek Reservoir	2 Sq. mi.	X		

EXHIBIT 7
Page 1

Directory of State Harbor Facilities
State of Alaska [71]

EXHIBIT 7
Page 2

SIBERIA
ARCTIC
Pt. Barrow
OCEAN
U.S.S.R.
UNITED STATES
UNITED
STATES
CANADA
RIVER
YUKON
FAIRBANKS
CANADA
BERING
SEA
ANCHORAGE
CORDOVA
SKAGWAY
JUNEAU
PETERSBURG
WRANGELL
KETCHIKAN
SITKA
SEWARD
KODIAK
GULF
OF
ALASKA
Bristol
Bay

ALASKA

Directory of State Harbor Facilities

DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATERS AND HARBORS

JUNEAU, ALASKA

EXHIBIT 7
Page 3

INDEX

Southeastern Alaska — Page

- Angoon Dock . . . . 1.
- Angoon Float . . . . 2.
- Auke Bay Float . . . . 3.
- Baranof Floats . . . . 4.
- Craig City Float & Dock . . . . 5.
- Craig Harbor Facilities . . . . 6.
- Douglas Boat Harbor Facilities - Douglas Dock . . 7.
- Elfin Cove Inner Harbor & Outer Harbor Facilities . 8.
- Entrance Island Float . . . . 9.
- Haines Boat Harbor Facilities . . . . 10.
- Helm Bay Float . . . . 11.
- Hoonah Floats . . . . 12.
- Hydaburg Floats . . . . 13.
- Hyder Floats . . . . 14.
- Juneau Vicinity Map . . . . 15.
- Juneau Boat Harbor #1 . . . . 16.
- Juneau Boat Harbor #2 . . . . 17.
- Juneau City Float . . . . 18.
- Kake Dock . . . . 19.
- Kake Floats (Portage Cove) . . . . 20.
- Ketchikan Vicinity Map . . . . 21.
- Ketchikan Bar Harbor Facilities . . . . 22.
- Ketchikan City Float . . . . 23.
- Ketchikan Ryus Float . . . . 24.
- Ketchikan Thomas Basin Harbor Facilities . . . . 25.

EXHIBIT 7
Page 4

INDEX (cont)

Southeastern Alaska

	Page
Ketchikan (Hole-in-the-Wall Floats)	26.
Ketchikan (Knudson Cove Floats)	27.
Klawock Dock	28.
Klawock Floats	29.
Loring Float	30.
Metlakatla Harbor Facilities	31.
Myers Chuck	32.
Pelican Boat Harbor Facilities	33.
Petersburg Boat Harbor Facilities	34.
Petersburg (Papke Landing Float)	35.
Petersburg (West Petersburg Float)	36.
Point Baker Float	37.
Port Alexander Inner & Outer Harbor Floats . .	38.
Sitka Vicinity Map	39.
Sitka City Float	40.
Sitka Crescent Harbor Facilities (Not Included) .	41.
Sitka Grid	42.
Sitka Thompson Harbor Facilities	43.
Skagway Boat Harbor Facilities	44.
Tongass Harbor Floats	45.
Tenakee Floats	46.
Wrangell Vicinity Map	47.
Wrangell Boat Harbor Facilities	48.
Yakutat Floats	49.

EXHIBIT 7
Page 5

INDEX (cont)

Westward Alaska Page

Cordova Boat Harbor Facilities . . . . 50.
Dillingham Boat Harbor Facilities . . . . 51.
Halibut Cove Float . . . . 52.
Homer Boat Harbor Facilities . . . . 53.
Kenai Float . . . . 54.
Kodiak Boat Harbor Facilities . . . . 55.
Ninilchik Boat Harbor Facilities . . . . 56.
Seldovia Boat Harbor Facilities . . . . 57.
Seward Boat Harbor Facilities . . . . 58.
Valdez Boat Harbor Facilities . . . . 59.

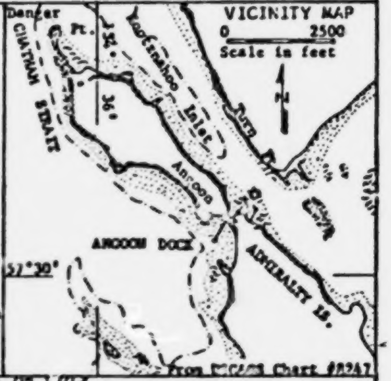
EXHIBIT 7
Page 6

OPERATED BY VILLAGE OF ANGOON
DOCK MASTER .... No
DISTANCE FROM CITY CENTER ...... At village center

DOCKAGE FEES .... None

LIGHTING ON DOCK ..... No
POWER ON DOCK .... No
WATER ON DOCK .... No
RESTROOM FACILITIES ON DOCK ... No
GRID FACILITIES ...... No
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES .... None
LODGING AVAILABLE .... No
GROCERY &/OR RESTAURANT FACILITIES.. Groceries only -
3 blocks

FUEL AVAILABLE .... No
COMMUNICATION FACILITIES ..Radiotelephone at grocery store
REMARKS................ Boat mooring available in harbor
on Kootznahoo side.


VICINITY MAP
0 2500
Scale in feet
N
Danger Pt.
CHATHAM STRAIT
134°
36°
Kootznahoo Inlet
Turn Pt.
Angoon
ANGOON DOCK
ADMIRALTY IS.
57°30'
From [illegible] Chart #8247

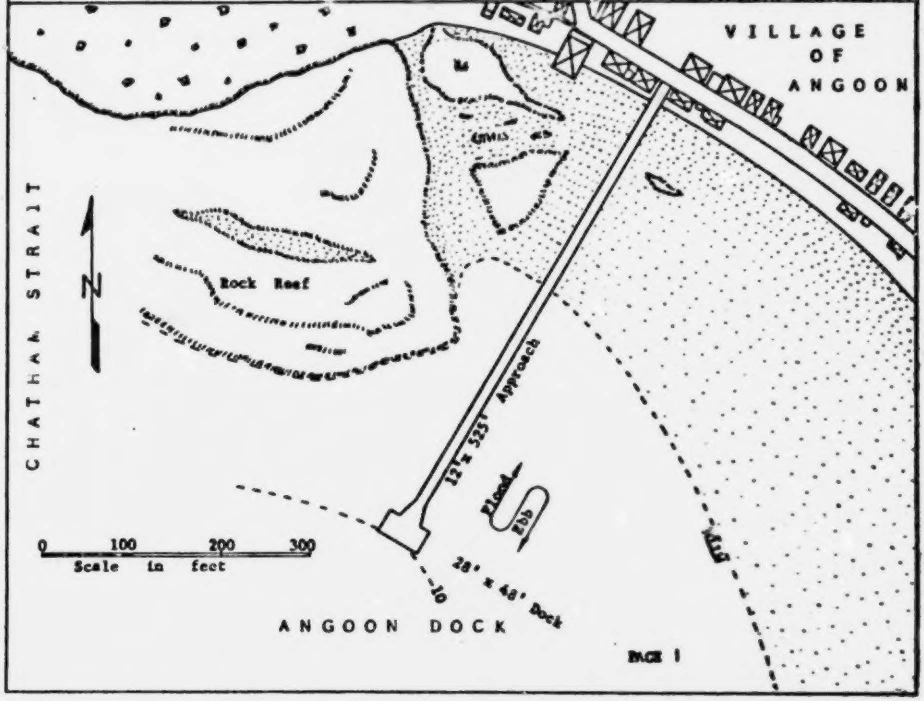
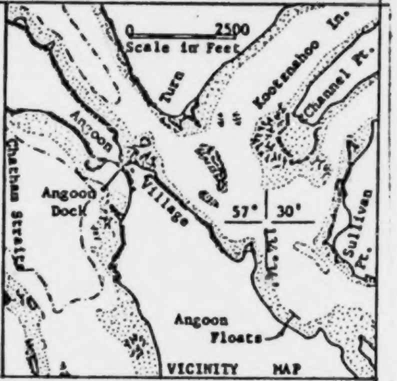
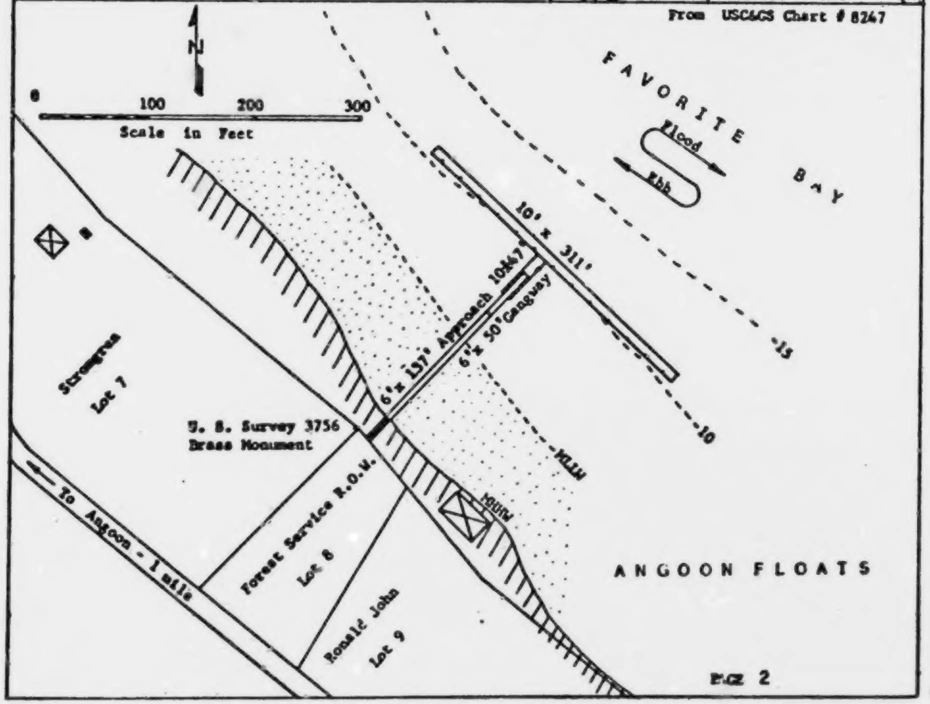

VILLAGE
OF
ANGOON
CHATHAM STRAIT
N
Rock Reef
12' x 525' Approach
Flood
Ebb
28' x 48' Dock
10
0 100 200 300
Scale in feet
ANGOON DOCK
PAGE 1

EXHIBIT 7
Page 7

OPERATED BY THE VILLAGE OF ANGOON	
HARBOR MASTER	No
DISTANCE FROM CITY CENTER	1 mile
BERTHING ACCOMODATIONS & FEES....	Open moorage, no fee
TRANSIENT MOORAGE	Yes, space available
LIGHTING ON FLOAT	No
POWER ON FLOAT	No
WATER ON FLOAT	No
RESTROOM FACILITIES ON FLOAT	No
GRID FACILITIES	No
MARINE WAYS AVAILABLE............	No
REPAIR FACILITIES	None
LODGING AVAILABLE	None
GROCERY &/OR RESTAURANT FACILITIES...	Groceries only, in town
FUEL AVAILABLE....................	No
COMMUNICATION FACILITIES...	Radiotelephone at grocery store
REMARKS.......	Seaplane float 600 yds. NW of boat harbor. Fuel and some repairs available at Hood Bay cannery 20 miles to the SE.

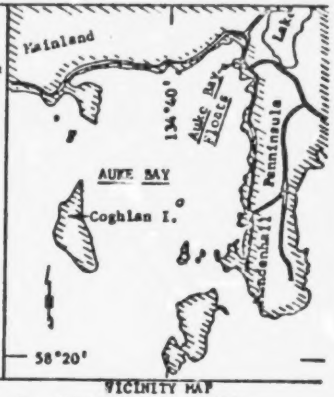

0
2500
Scale in Feet
Kootznahoo In.
Channel Pt.
Turn
Angoon
Village
Angoon Dock
Chatham Strait
57°
30'
134°34'
Sullivan Pt.
Angoon Floats
VICINITY MAP

From USC&GS Chart # 8247

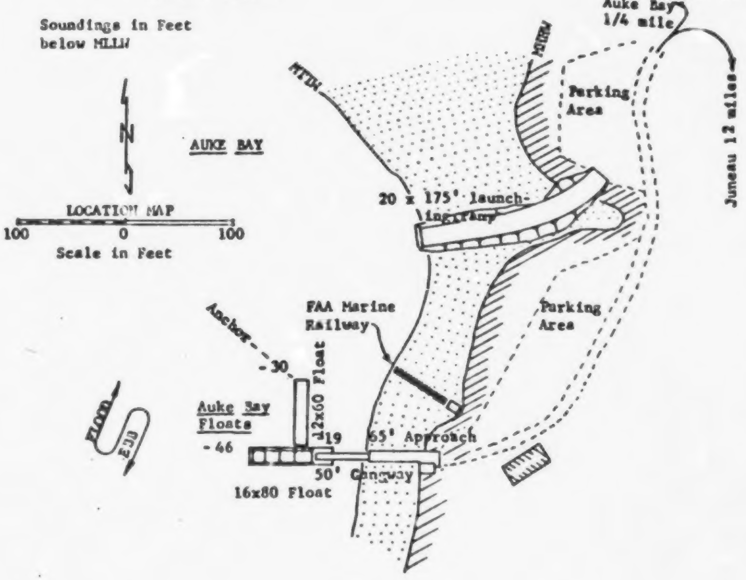

N
0
100
200
300
Scale in Feet
FAVORITE BAY
Flood
Ebb
-15
-10
10' x 311'
6'x 137' Approach 10x47
6'x 50'Gangway
MLLW
MHHW
Strongren
Lot 7
U. S. Survey 3756
Brass Monument
Forest Service R.O.W.
Lot 8
Ronald John
Lot 9
To Angoon - 1 mile
ANGOON FLOATS

PAGE 2

OPERATED BY AUKE BAY P.U.D. (GREATER JUNEAU BOROUGH)
HARBOR MASTER .... No - Inquire at hardware store
DISTANCE FROM COMMUNITY CENTER .. ¼ mile from Auke Bay hardware store - 12 miles from City of Juneau
BERTHING ACCOMODATION & FEES..... $1.00/ft/mo.
TRANSIENT MOORAGE............Yes, 48 hrs. free, $1.00 per day
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... In Juneau
MARINE WAYS AVAILABLE ..... In Juneau
REPAIR FACILITIES .... Yes, limited - outboard motor repair at hardware store
LODGING AVAILABLE .... No
GROCERIES &/OR RESTAURANT .... Groceries only
FUEL AVAILABLE.............. Yes, Std.&Union at local marinas
COMMUNICATION FACILITIES... Telephone at local businesses
REMARKS....... Two adjacent local marinas have extensive moorage facilities - State boat launching ramp as shown.


Mainland
Lake
134°40'
Auke Bay Floats
Peninsula
Mendenhall
AUKE BAY
Coghlan I.
58°20'

VICINITY MAP
From USC & GS Chart #8302

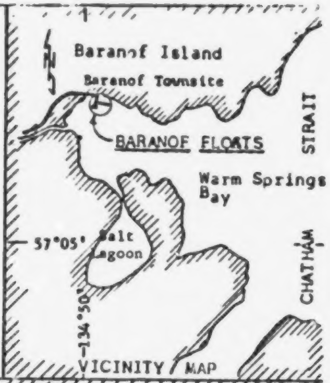

Soundings in Feet
below MLLW
AUKE BAY
LOCATION MAP
100
0
100
Scale in Feet
Auke Bay
1/4 mile
Juneau 12 miles
MHHW
MLLW
Parking
Area
20 x 175' launching ramp
Parking
Area
FAA Marine
Railway
Anchor
-30
12x60 Float
Auke Bay
Floats
-46
19
65' Approach
50' Gangway
16x80 Float
FLOOD
EBB

AUKE BAY FLOATS

EXHIBIT 7
Page 9

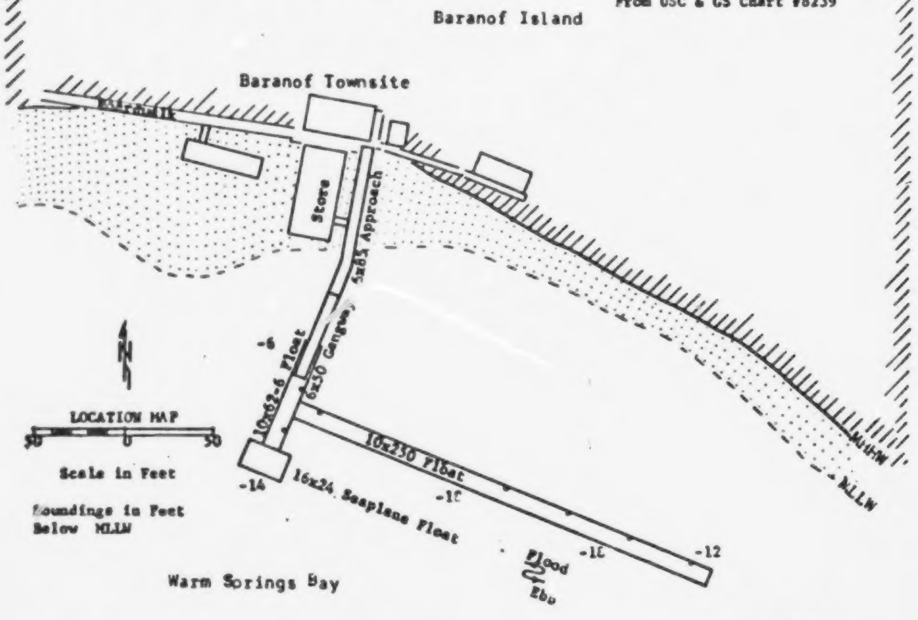
OPERATED BY COMMUNITY OF BARANOF

HARBOR MASTER	No
DISTANCE FROM COMMUNITY CENTER	At community center
BERTHING ACCOMODATION & FEES	Open moorage, no fee
LIGHTING ON FLOAT	No
POWER ON FLOAT	No
POTABLE WATER ON FLOAT	Yes, at gangway
RESTROOM FACILITIES ON FLOAT	No
GRID FACILITIES	No
MARINE WAYS AVAILABLE	No
REPAIR FACILITIES	No
LODGING AVAILABLE	Yes, cabins - inquire at store
GROCERIES &/OR RESTAURANT	Groceries only
FUEL AVAILABLE	No
COMMUNICATION FACILITIES	Radiotelephone (state furnished) at store
REMARKS	U.S. Post Office at store. Hot spring facilities available.


N
Baranof Island
Baranof Townsite
BARANOF FLOATS
STRAIT
Warm Springs Bay
57°05'
Salt Lagoon
134°50'
CHATHAM

VICINITY MAP

From USC & GS Chart #8239


Baranof Island
Baranof Townsite
Boardwalk
Store
5x85 Approach
6x50 Gangway
10x62-6 Float
10x230 Float
16x24 Seaplane Float
-6
-14
-10
-10
-12
MHHW
MLLW
Flood
Ebb
N
50
0
50
Warm Springs Bay

LOCATION MAP

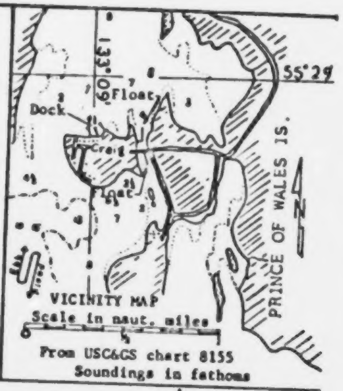
Scale in Feet

Soundings in Feet Below MLLW

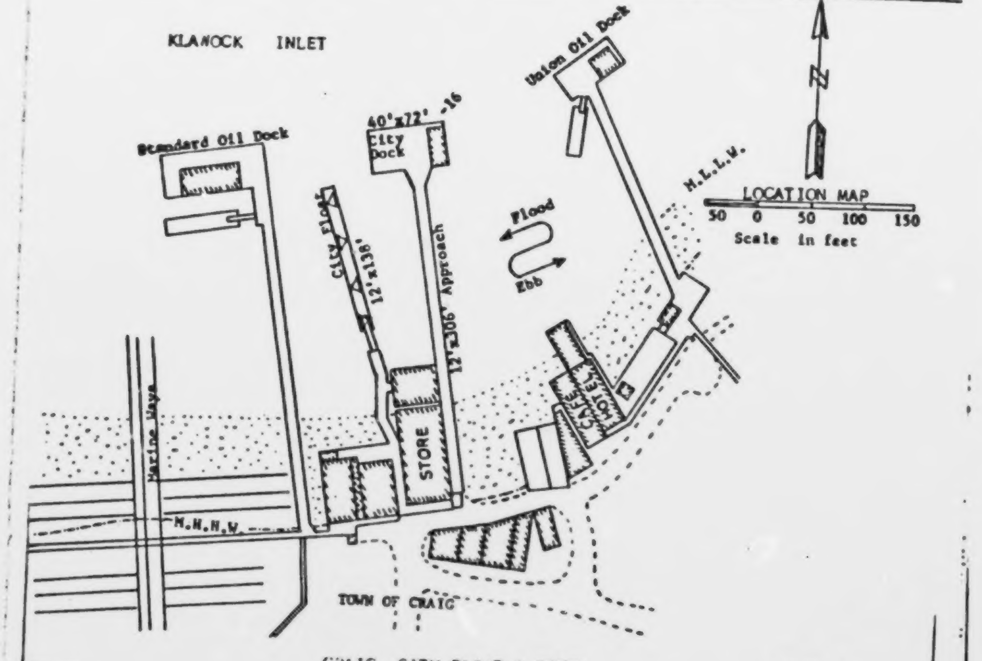
BARANOF FLOATS

PAGE 4

OPERATED BY CITY OF CRAIG
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ..... At city center
BERTHING ACCOMODATIONS & FEES...Open moorage & dockage, no fees
TRANSIENT MOORAGE .... Open moorage
LIGHTING ON FLOAT .... Yes   LIGHTING ON DOCK ..... Yes
POWER ON FLOAT .... No   POWER ON DOCK .... Yes
WATER ON FLOAT .... No   WATER ON DOCK .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... At South Cove harbor
MARINE WAYS AVAILABLE ... No
REPAIR FACILITIES .... No
LODGING AVAILABLE........ Yes
GROCERY &/OR RESTAURANT FACILITIES.... Yes, both
FUEL AVAILABLE .... Yes, at respective docks
COMMUNICATION FACILITIES .... Yes, ACS radiotelephone
REMARKS...... Present city float is in poor condition - scheduled for reconstruction in 1965.


55°29'
133°09'
Float
Dock
Craig
PRINCE OF WALES IS.
N

VICINITY MAP
Scale in naut. miles
From USC&GS chart 8155
Soundings in fathoms


KLAWOCK INLET
Standard Oil Dock
City Dock
40'x72' -16
City Float
12'x138'
12'x306' Approach
Union Oil Dock
Flood
Ebb
M.L.L.W.
N
50 0 50 100 150
Scale in feet
STORE
CAFE
HOTEL
Marine Ways
M.H.H.W.
TOWN OF CRAIG

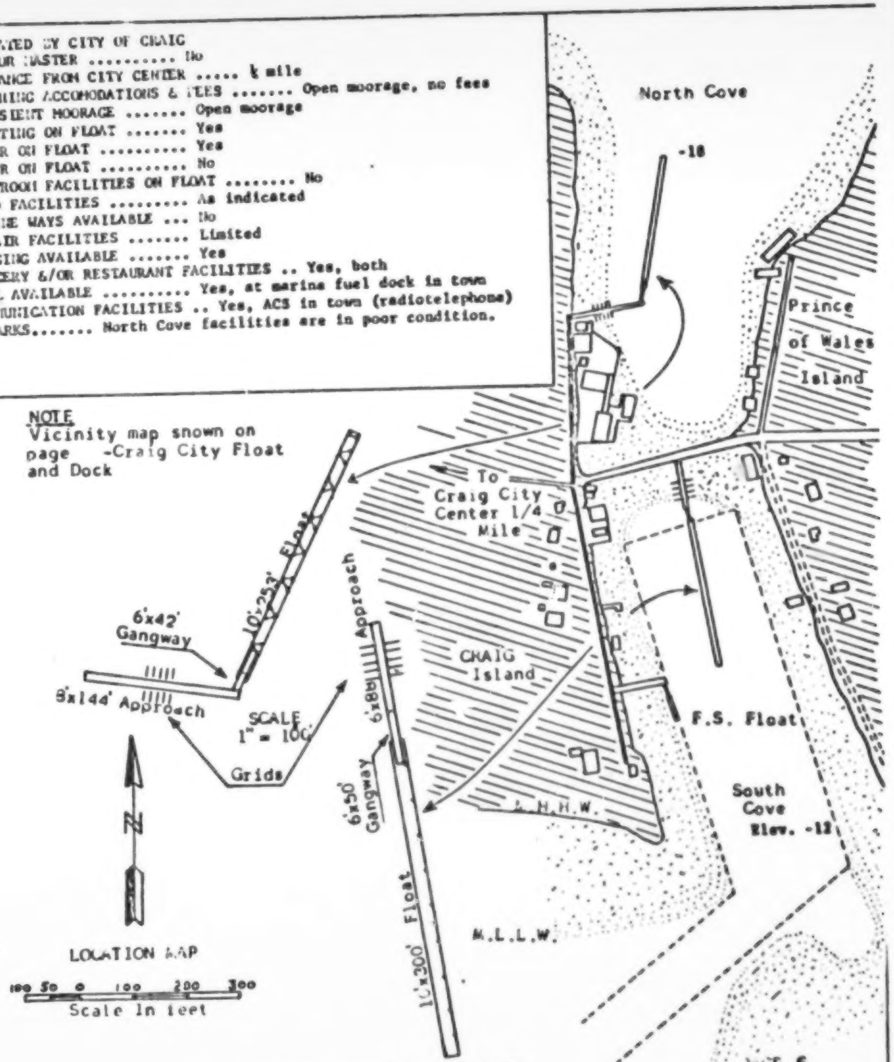
LOCATION MAP

CRAIG, CITY FLOAT & DOCK

PAGE 5

OPERATED BY CITY OF CRAIG
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ..... ¼ mile
BERTHING ACCOMODATIONS & FEES .... Open moorage, no fees
TRANSIENT MOORAGE .... Open moorage
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... Yes
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... As indicated
MARINE WAYS AVAILABLE ... No
REPAIR FACILITIES .... Limited
LODGING AVAILABLE .... Yes
GROCERY &/OR RESTAURANT FACILITIES .. Yes, both
FUEL AVAILABLE .... Yes, at marine fuel dock in town
COMMUNICATION FACILITIES .. Yes, ACS in town (radiotelephone)
REMARKS....... North Cove facilities are in poor condition.

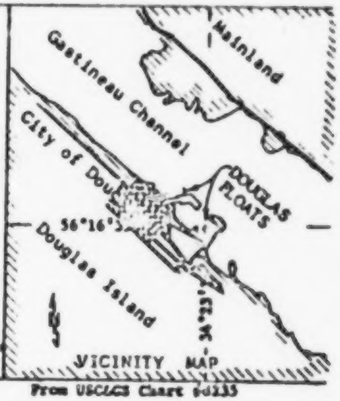
NOTE
Vicinity map shown on page -Craig City Float and Dock


North Cove
-18
Prince of Wales Island
To Craig City Center 1/4 Mile
CRAIG Island
F.S. Float
South Cove Elev. -12
H.H.W.
M.L.L.W.
10'x252' Float
6'x42' Gangway
8'x144' Approach
SCALE 1" = 100'
Grids
6'x88' Approach
6'x50' Gangway
10'x300' Float
N
LOCATION MAP
100 50 0 100 200 300
Scale in feet

CRAIG HARBOR FACILITIES

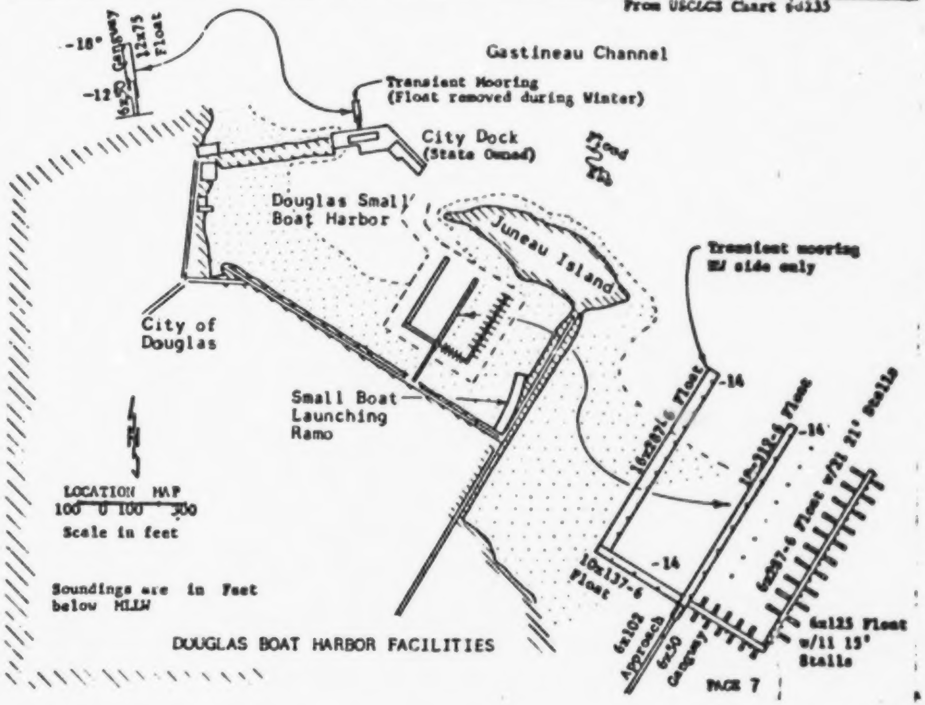
OPERATED BY CITY OF DOUGLAS

HARBOR MASTER	No - inqu're at City Clerk's office
DISTANCE FROM CITY CENTER	¼ mile
BERTHING ACCOM. & FEES	Approx. $2.00/ft/yr
TRANSIENT MOORAGE	Yes - 72 hr. free as shown
LIGHTING ON FLOAT	Yes
POWER ON FLOAT	No
POTABLE WATER ON FLOAT	Yes, at gangway
RESTROOM FACILITIES ON FLOAT	Yes
GRID FACILITIES	None in Douglas - avail. in Juneau, 2 mile
MARINE WAYS AVAILABLE	N.C. Co. in Juneau, 400 tons
REPAIR FACILITIES	Available in Juneau
LODGING AVAILABLE	None in Douglas-avail. in Juneau
GROCERY &/OR RESTAURANT	Yes, both at city center
FUEL AVAILABLE	None in Douglas - avail. in Juneau
COMMUNICATION FACILITIES	None at harbor - telephone at city center
REMARKS	Boat launching ramp at boat basin - U.S. Post Office in Douglas, City Dock $10 tie up after 24 hr $2.00/Ton Dockage fee unclassified cargo


Mainland
Gastineau Channel
City of Dou
DOUGLAS FLOATS
58°16'3
Douglas Island
134°25'

VICINITY MAP

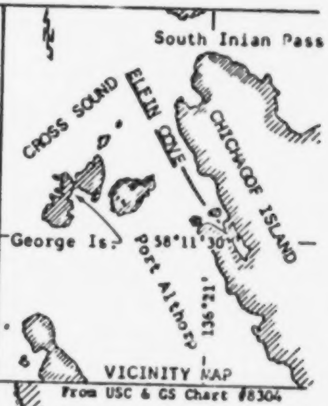
From USC&GS Chart 8235


-18°
6x20 Gangway
12x75 Float
-12°
Gastineau Channel
Transient Mooring
(Float removed during Winter)
City Dock
(State Owned)
Flood
Ebb
Douglas Small Boat Harbor
Juneau Island
Transient mooring
E/ side only
City of Douglas
Small Boat Launching Ramo
-14
16x287-6 Float
-14
10x312-6 Float
6x287-6 Float w/21 21' Stalls
-14
10x137-6 Float
6x102 Approach
6x50 Gangway
6x125 Float w/11 15' Stalls
LOCATION MAP
100 0 100 300
Scale in feet
Soundings are in Feet below MLLW

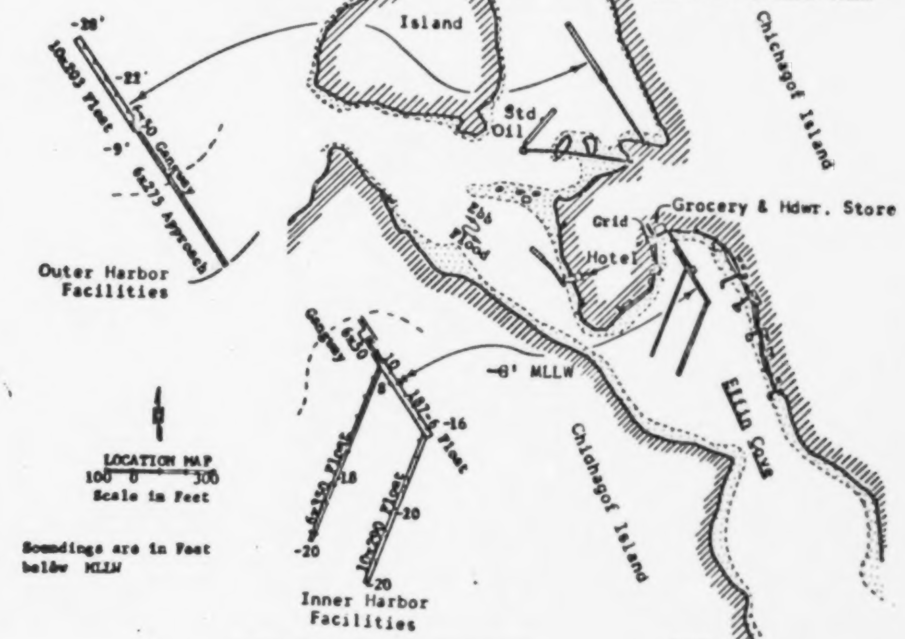
DOUGLAS BOAT HARBOR FACILITIES

OPERATED BY COMMUNITY OF ELFIN COVE.

HARBOR MASTER.............	No
DISTANCE FROM COMMUNITY ..	At community center
BERTHING ACCOM. & FEES...	Open moorage - no charge
LIGHTING ON FLOAT	No
POWER ON FLOAT	No
POTABLE WATER ON FLOAT...	Yes, at gangways
RESTROOM FACILITIES ON FLOAT	No
GRID FACILITIES	Yes, adjacent to inner floats
MARINE WAYS AVAILABLE....	No
REPAIR FACILITIES	Limited
LODGING AVAILABLE	Yes, one hotel
GROCERY &/OR RESTAURANT FACILITIES	Yes, both
FUEL AVAILABLE	Standard Oil at outer harbor
COMMUNICATION FACILITIES...	Radiotelephone by schedule(State)
REMARKS.....	U.S. Post Office at grocery store, a well sheltered harbor from all weather conditions, inner harbor channel dredged to - 8'- feet MLLW. Small machine shop available for minor repairs.


South Inian Pass
CROSS SOUND
ELFIN COVE
CHICHAGOF ISLAND
George Is.
Port Althorp
58°11'30"
136°21'

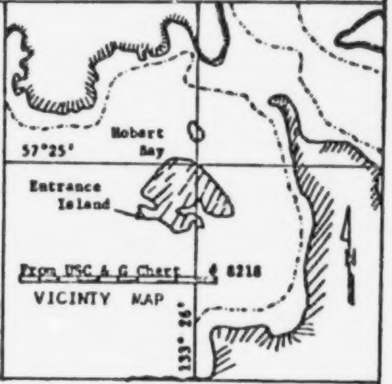
VICINITY MAP
From USC & GS Chart #8304


Island
Std Oil
Chichagof Island
-28'
-22'
-9'
10x303 Float
6x50 Gangway
6x275 Approach
Outer Harbor Facilities
Ebb
Flood
Grid
Grocery & Hdwr. Store
Hotel
-8' MLLW
Gangway
6x50
10
8
10x187.5 Float
-16
18
-20
6x250 Float
10x200 Float
-20
20
Elfin Cove
Chichagof Island
LOCATION MAP
100 0 300
Scale in Feet
Soundings are in Feet below MLLW
Inner Harbor Facilities

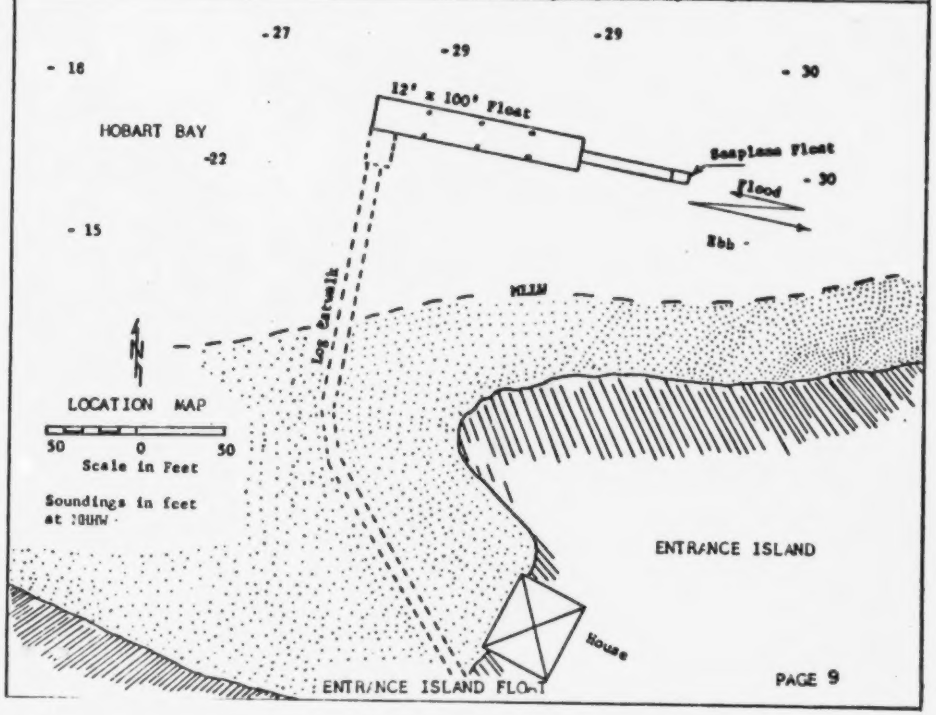
ELFIN COVE HARBOR FACILITIES

EXHIBIT 7
Page 14

MAINTAINED BY THE DIVISION OF WATER & HARBORS
HARBOR MASTER .... No
BERTHING ACCOMODATIONS & FEES..... Open moorage
TRANSIENT MOORAGE....... Yes
LIGHTING ON FLOAT ...... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT ..... No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES....... None
LODGING AVAILABLE ...... None
GROCERY &/OR RESTAURANT FACILITIES .... None
FUEL AVAILABLE .... No
COMMUNICATION FACILITIES .... No
REMARKS....... Primarily used as a weather layover. facility.


57°25'
Hobert Bay
Entrance Island
133° 26'

From USC & G Chart # 8218
VICINTY MAP


-16
-27
-29
-29
-30
HOBART BAY
-22
-15
12' x 100' Float
Seaplane Float
-30
Flood
Ebb
MLLW
Log Catwalk
50
0
50
Scale in Feet
ENTRANCE ISLAND
House
ENTRANCE ISLAND FLOAT

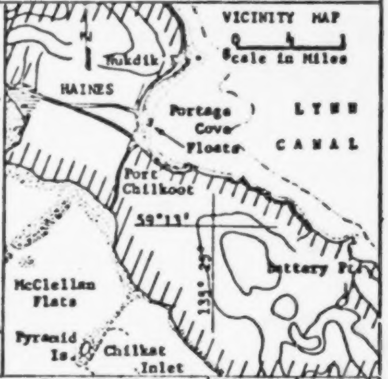
LOCATION MAP

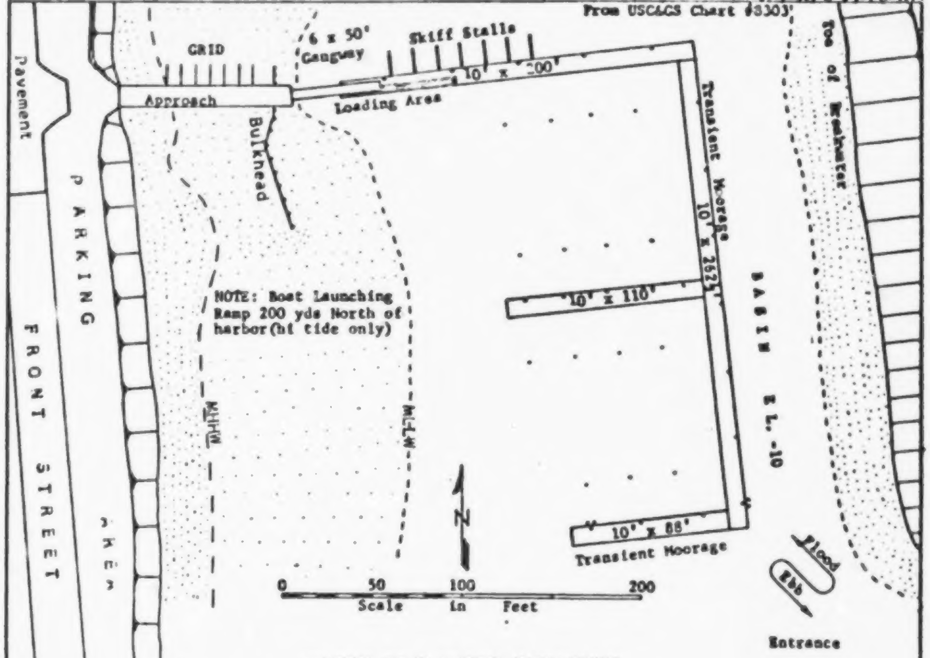
Soundings in feet at MHHW

PAGE 9

EXHIBIT 7
Page 15

OPERATED BY THE CITY OF HAINES
HARBOR MASTER .... Yes, contact at home
DISTANCE FROM CITY CENTER .... 1 block
BERTHING ACCOM. & FEES.. Space avail. basis - skiffs - 12.00 per yr. all other 50.00/yr.
TRANSIENT MOORAGE....... Yes, space available
LIGHTING ON FLOAT ...... Yes
POWER ON FLOAT .... Yes, (110 V - open outlet)
WATER ON FLOAT .... Yes, potable-summer months only
RESTROOM FACILITIES ON FLOAT ..... Yes
GRID FACILITIES.......... Yes, in harbor-limited to high tides
MARINE WAYS AVAILABLE... No
REPAIR FACILITIES... Machine shop & garage - in town
LODGING AVAILABLE... Yes, hotel & motel in town
GROCERY &/OR RESTAURANT FACILITIES..... Both, in town
FUEL AVAILABLE...... Yes, all types - by truck at approach
COMMUNICATION FAC... Radiotelephone/phone/teletype in town
REMARKS... Ferry service available to southeastern ports. connecting highway to Alaska Highway.

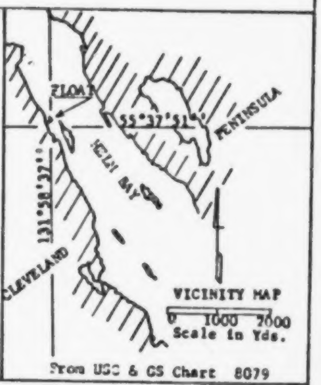

VICINITY MAP
0
1
Scale in Miles
LYNN
CANAL
HAINES
Yukdik
Portage Cove Floats
Port Chilkoot
59°13'
Battery Pt.
McClellan Flats
Pyramid Is.
Chilkat Inlet
From USC&GS Chart #8303


GRID
6 x 50' Gangway
Skiff Stalls
10' x 200'
Approach
Loading Area
Bulkhead
Pavement
PARKING AREA
FRONT STREET
NOTE: Boat Launching Ramp 200 yds North of harbor(hi tide only)
MHHW
MLLW
Transient Moorage
10' x 262'
10' x 110'
10' x 88'
Transient Moorage
BASIN EL. -10
Toe of Breakwater
N
0
50
100
200
Scale in Feet
Flood
Ebb
Entrance

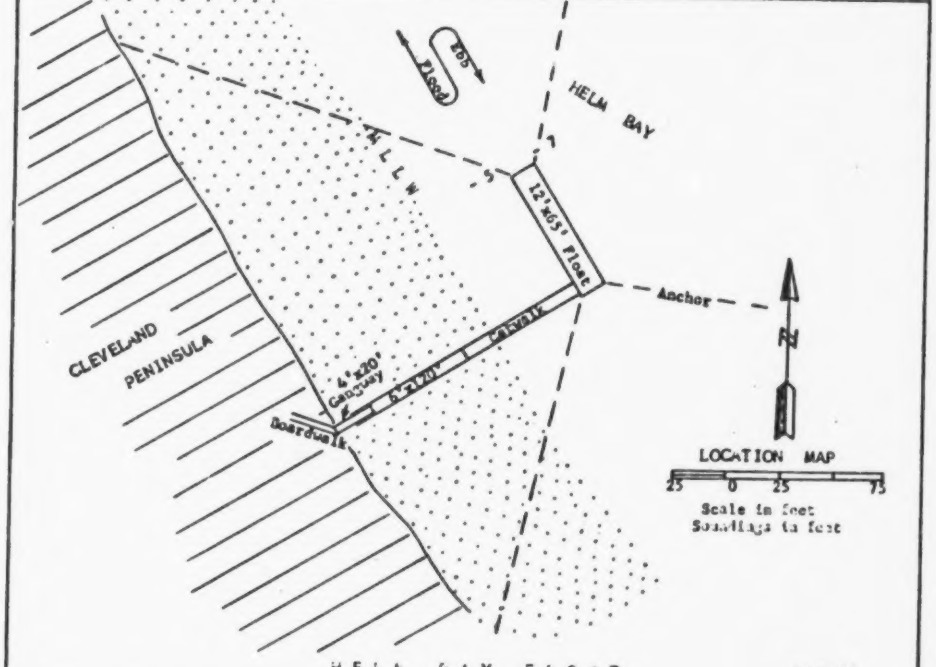
HAINES BOAT HARBOR FACILITIES

EXHIBIT 7
Page 16

MAINTAINED BY THE DIVISION OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY OF KETCHIKAN ..... Approx. 20 miles
BERTHING ACCOMODATIONS & FEES......... Open moorage, no fees
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE................. No
REPAIR FACILITIES ...... No
GROCERY &/OR RESTAURANT FACILITIES .. No
FUEL AVAILABLE .... No
COMMUNICATION FACILITIES .... No
REMARKS....... This float is primarily utilized as a weather layover facility. Exceptionally good hunting and fishing is also found in the immediate area.


FLOAT
55°37'51"
PENINSULA
HELM BAY
131°58'37"
CLEVELAND
0 1000 2000

VICINITY MAP
Scale in Yds.
From USC & GS Chart 8079

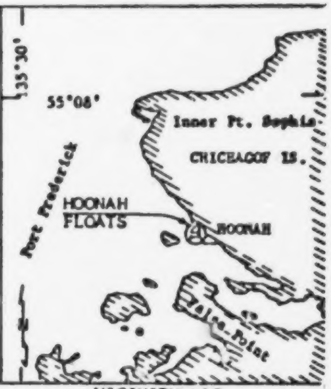

HELM BAY
Ebb
Flood
MLLW
5
12'x65' Float
Anchor
N
6'x120' Catwalk
4'x20' Gangway
Boardwalk
CLEVELAND PENINSULA
25 0 25 75

LOCATION MAP
Scale in feet
Soundings in feet

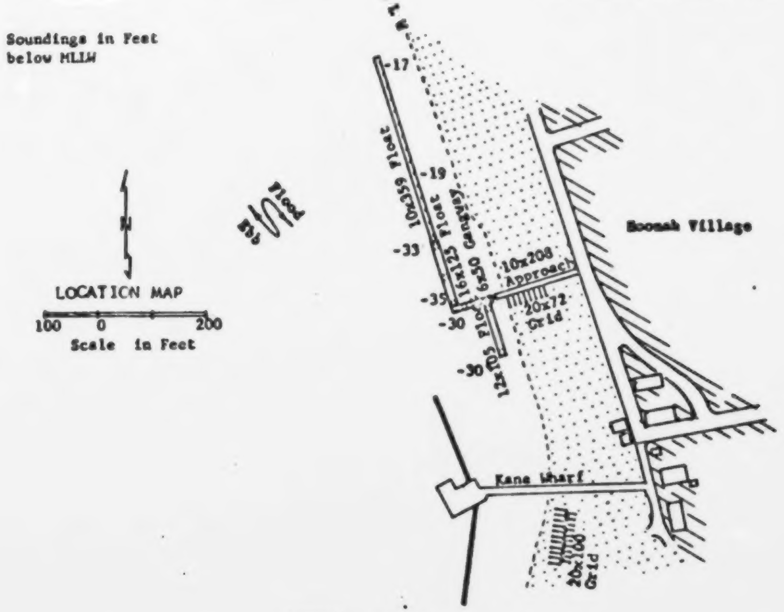
HELM BAY FLOAT

EXHIBIT 7
Page 17

OPERATED BY VILLAGE OF HOONAH
HARBOR MASTER .... No
DISTANCE FROM VILLAGE CENTER ..... At village center
BERTHING ACCOMODATIONS & FEES .... Open moorage, no fees
TRANSIENT MOORAGE .... Open moorage
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT ..... No
GRID FACILITIES .... Two grids available as shown
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES .... Limited, at cannery in season
LODGING AVAILABLE .... Yes
GROCERY &/OR RESTAURANT FACILITIES ... Yes, both
FUEL AVAILABLE .... Yes, Union at Kane Dock, Stnd. at cannery
COMMUNICATION FACILITIES ... Yes, direct telephone service
REMARKS....... Float system is exposed to severe southwest
winds during winter months.


135°30'
55°08'
Inner Pt. Sophia
CHICHAGOF IS.
Port Frederick
HOONAH FLOATS
HOONAH
Point

VICINITY MAP
From USC & GS Chart #8304

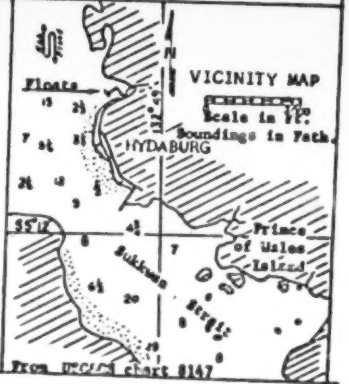

Soundings in Feet below MLLW
MLLW
-17
-19
-33
-35
-30
-30
10x359 Float
16x125 Float
6x50 Gangway
12x105 Float
10x208 Approach
20x72 Grid
Hoonah Village
Kane Wharf
20x100 Grid
Flood
Ebb
N
100 0 200
Scale in Feet

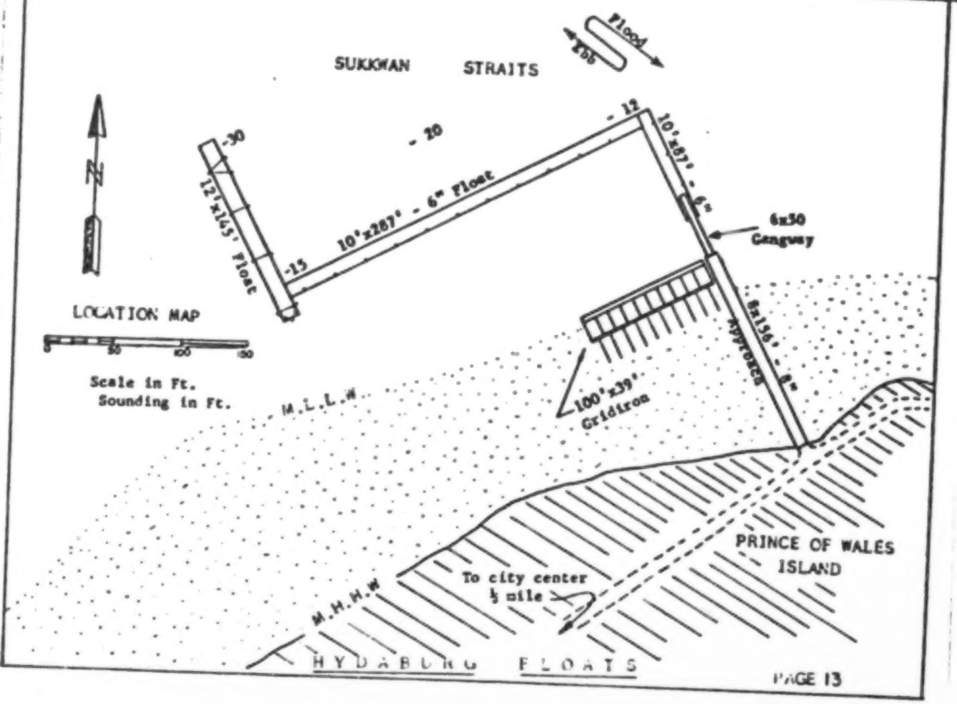
LOCATION MAP

HOONAH FLOATS

EXHIBIT 7
Page 18

CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ..... ½ mile
BERTHING ACCOM. & FEES .... open moorage
TRANSIENT MOORAGE .... open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .. No
GRID FACILITIES .... Yes, as indicated
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES .... At cannery in season
LODGING AVAILABLE .... Room & board only at private residence
GROCERY &/OR RESTAURANT FACILITIES .... Groceries only - in town
FUEL AVAILABLE .... At cannery
COMMUNICATION FACILITIES............... ACS in town
REMARKS.......

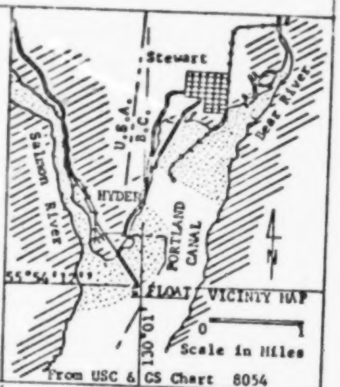

Floats
VICINITY MAP
Scale in Ft.
Soundings in Fath.
HYDABURG
Prince of Wales Island
Sukkwan Straits
55°12'
N
From USC&GS chart 8147


SUKKWAN STRAITS
Flood
Ebb
-12
-20
-30
-15
12'x145' Float
10'x287' - 6" Float
10'x87' - 6"
6x50 Gangway
8x156' - 8" Approach
100'x39' Gridiron
N
LOCATION MAP
0
50
100
150
Scale in Ft.
Sounding in Ft.
M.L.L.W.
M.H.H.W.
To city center ½ mile
PRINCE OF WALES ISLAND

HYDABURG FLOATS

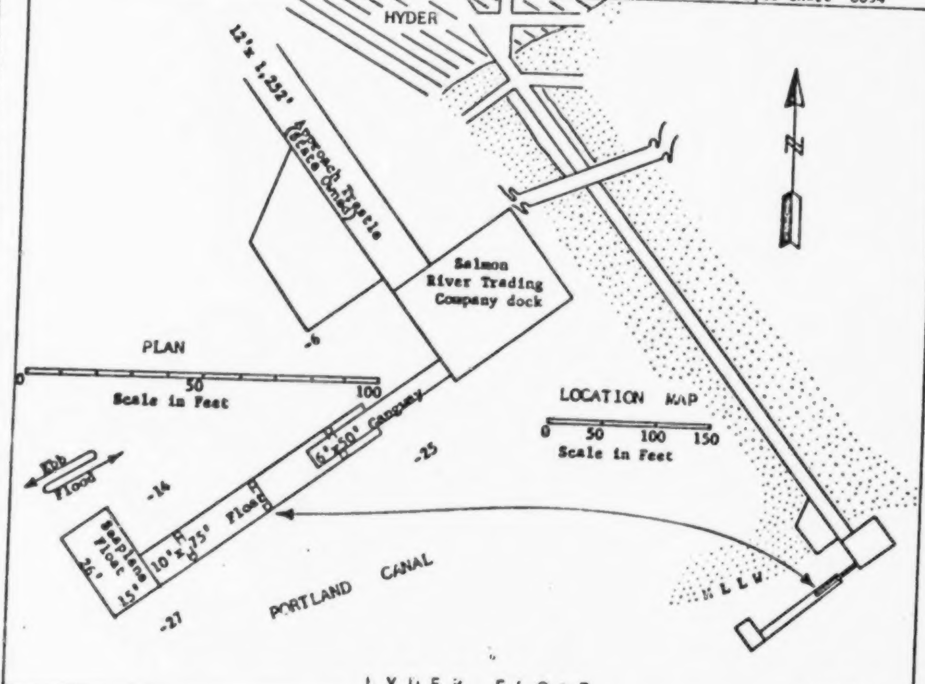
EXHIBIT 7
Page 19

OPERATED BY COMMUNITY OF HYDER
HARBOR MASTER .... No
DISTANCE FROM COMMUNITY CENTER ...... ¼ mile
BERTHING ACCOMODATIONS & FEES........ Open moorage, no fee
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... In Stewart
MARINE WAYS AVAILABLE... No
REPAIR FACILITIES........ Very limited
LODGING AVAILABLE........ Yes, motel in Hyder-hotels in Stewart
GROCERY &/OR RESTAURANT FACILITIES... Restaurant only-groceries in Stewart
FUEL AVAILABLE........... Fuel dock in Stewart
COMMUNICATION FACILITIES............... Direct telephone service-also state radiotelephone
REMARKS.... Taxi service available to Stewart approx. 7 miles. Canadian customs at the U.S. - B.C. border.


Stewart
U.S.A.
B.C.
Bear River
Salmon River
HYDER
PORTLAND CANAL
N
55°54'12"
FLOAT
130°01'
0
1
Scale in Miles

VICINITY MAP

From USC & GS Chart 8054

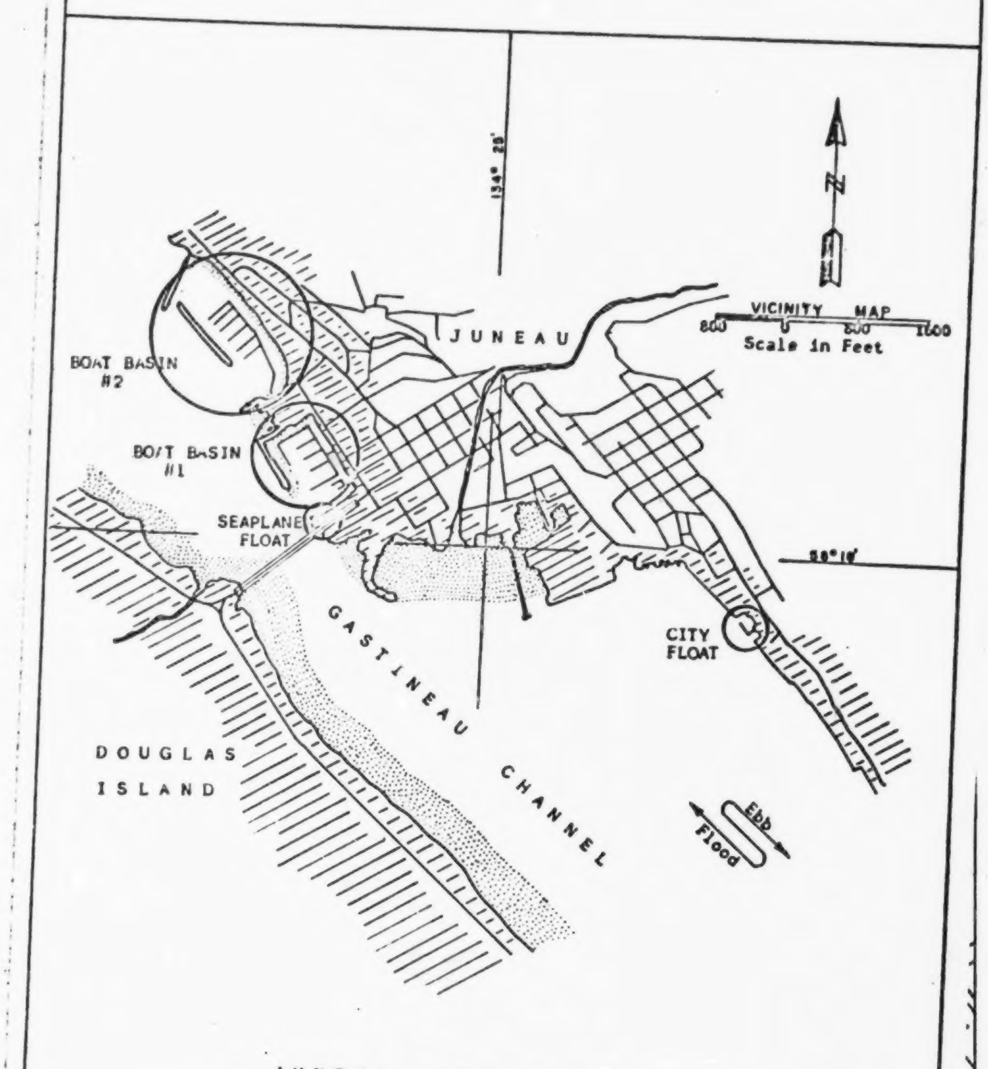

HYDER
12'x 1,252' Approach Trestle (State Owned)
Salmon River Trading Company dock
-6
PLAN
0
50
100
Scale in Feet
6'x50' Gangway
-25
10'x 75' Float
Seaplane Float
26'
15'
-14
-27
Ebb
Flood
PORTLAND CANAL
N
MLLW
0
50
100
150
Scale in Feet

LOCATION MAP

HYDER FLOAT

AGL 14

EXHIBIT 7
Page 20


134° 25'
N
VICINITY MAP
800 0 800 1600
Scale in Feet
JUNEAU
BOAT BASIN
#2
BOAT BASIN
#1
SEAPLANE
FLOAT
58°18'
CITY
FLOAT
GASTINEAU CHANNEL
DOUGLAS
ISLAND
Ebb
Flood

JUNEAU VICINITY MAP

PAGE 15

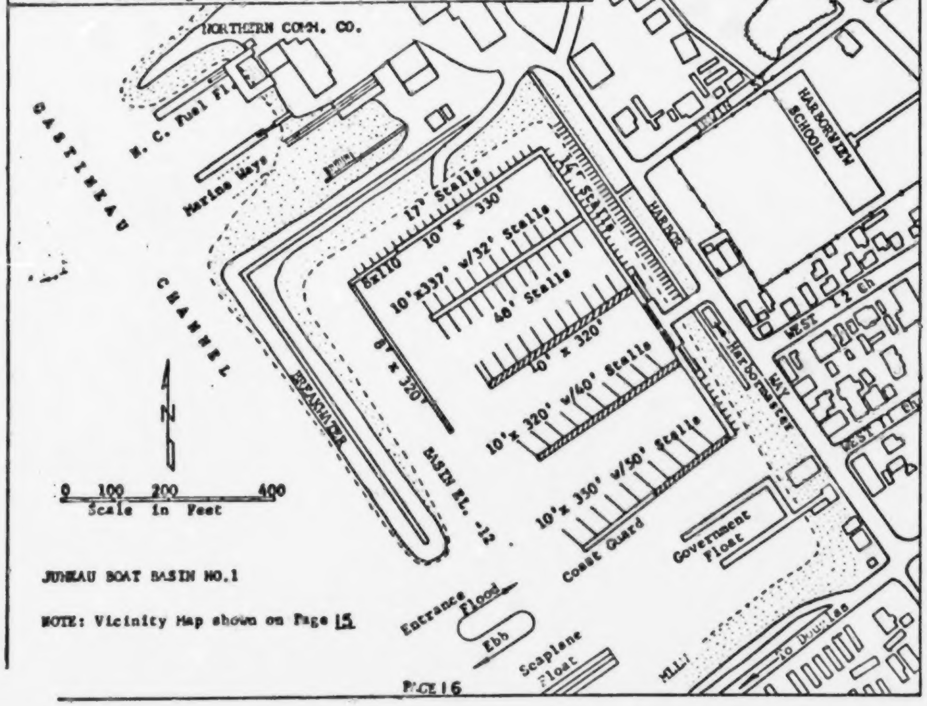
EXHIBIT 7
Page 21

OPERATED BY CITY OF JUNEAU
HARBOR MASTER .... Yes, 7 days - on call 24 hours
DISTANCE FROM CITY CENTER .... 1 mile
BERTHING ACCOM. & FEES ... Space available basis-3.00/ft/yr.
TRANSIENT MOORAGE... Yes - free 1st 14 dys.-50¢ per day after.
LIGHTING ON FLOAT .. Yes
POWER ON FLOAT ..... Yes - 100 V, metered
POTABLE WATER ON FLOAT ... Yes, at loading area only
RESTROOM FACILITIES ON FLOAT ..... Yes
GRID FACILITIES .... Yes
MARINE WAYS AVAILABLE .... Yes, private, 400 tons (110' length, 36' beam) adjacent to harbor
REPAIR FACILITIES... Garages, machine shops, etc, nearby
LODGING AVAILABLE... Hotels and motel in town
GROCERY & RESTAURANT FAC.. Restaurant at harbor, launderette 2 blocks, grocery 4 blocks - other in town
FUEL AVAIL.. Yes, all types in town-some avail. at adj. NC float
COMMUNICATION FAC.. Phone at Hbr. Masters house-ACS in town
REMARKS...Seaplane float located in harbor. Boat launching ramp at Douglas B.H. and Auke Bay.

LEGEND

▨ Transient Moorage
◘ 4 hr. Loading Area
☐ Rental Moorage

CITY OF JUNEAU

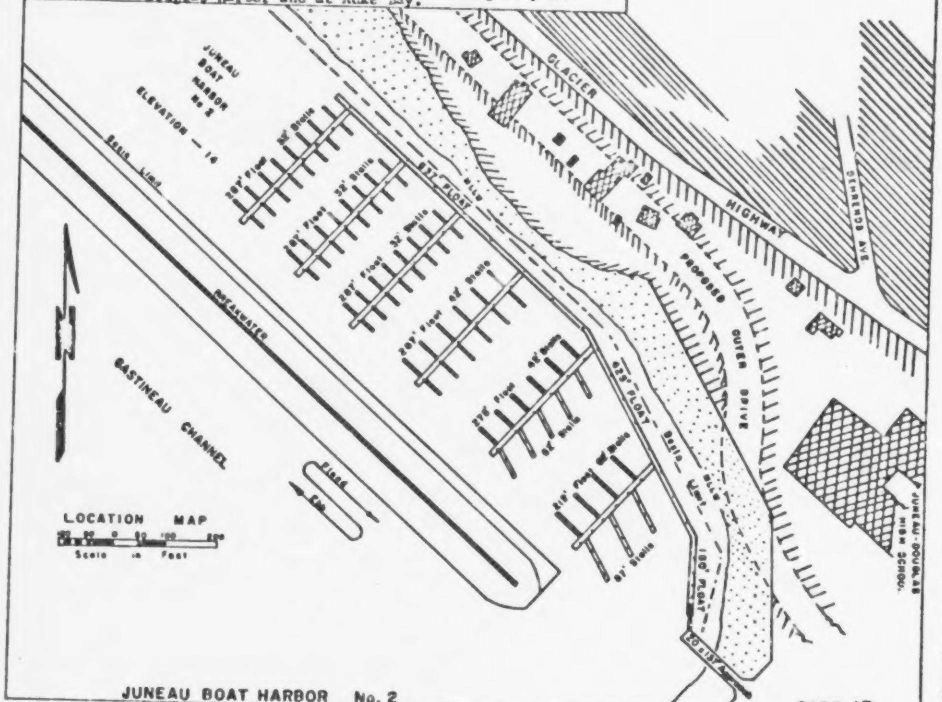

NORTHERN COMM. CO.
N. C. Fuel Fl.
Marine Ways
GASTINEAU CHANNEL
17' Stalls
10' x 330'
14' Stalls
HARBOR
8x110
10'x337' w/32' Stalls
40' Stalls
10' x 320'
8' x 320'
10'x 320' w/40' Stalls
10'x 350' w/50' Stalls
BREAKWATER
BASIN EL. -12
Harbormaster
WAY
WEST 12 th
WEST 11 th
HARBORVIEW SCHOOL
Coast Guard
Government Float
Entrance
Flood
Ebb
Seaplane Float
MILL
To Douglas
N
0 100 200 400
Scale in Feet
PAGE 16

JUNEAU BOAT BASIN NO.1

NOTE: Vicinity Map shown on Page 15

OPERATED BY CITY OF JUNEAU
HARBORMASTER .... Yes, 7 days - on call 24 hours
DISTANCE FROM CITY CENTER......... 1¼ miles
BERTHING ACCOM. & FEES............ Space avail. basis 3.00/ft/yr
TRANSIENT MOORAGE.... No, avail. Hbr. #1 - 2 blocks south
LIGHTING ON FLOAT.... Yes
POWER ON FLOAT........ Yes, 110 V, metered
POTABLE WATER ON FLOAT............ Yes, summer only
RESTROOM FACILITIES ON FLOAT .... Yes
GRID FACILITIES ..... None, available in Harbor #1
MARINE WAYS AVAIL... Yes, private, 400 tons (110' length, 36' beam) adjacent to harbor (W.C.C.O.)
REPAIR FACILITIES... Garages, machine shops, etc, nearby
LODGING AVAILABLE... Hotels and motels in town
GROCERY &/OR RESTAURANT FAC...Restaurant at Hbr. #1, Laundrette 4 blocks, grocery 6 blocks, others in town.
FUEL AVAIL..Yes, all types, Stnd. in town, Union-south end of town. Some types avail. at adjacent N.C. Company float.
COMMUNICATION FAC.. Phone in Hbr.Masters office at Hbr.#1 A.C.S. in town .
REMARKS.. Seaplane float at Hbr. #1-Boat launching ramp in Douglas Harbor and at Auke Bay.

VICINITY MAP
SHOWN ON PAGE 15


JUNEAU BOAT HARBOR No 2
ELEVATION — 14
Basin Limit
BREAKWATER
GASTINEAU CHANNEL
Flood
Ebb
LOCATION MAP
Scale in Feet
GLACIER
HIGHWAY
BEHRENDS AVE
PROPOSED
OUTER DRIVE
JUNEAU-DOUGLAS HIGH SCHOOL
FLOAT
625' FLOAT
100' FLOAT
Basin Limit

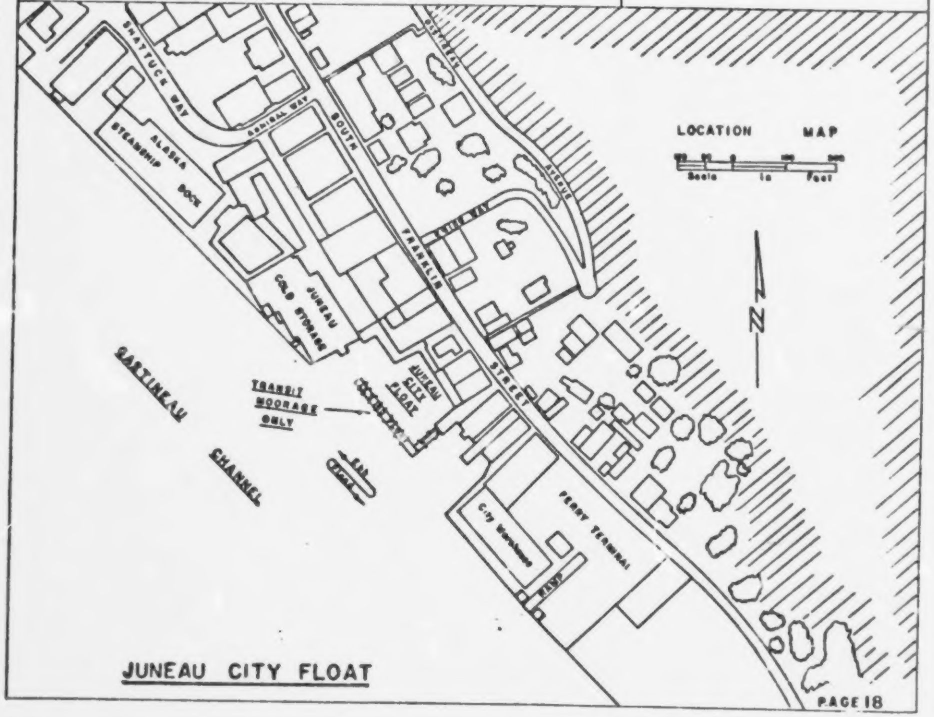
JUNEAU BOAT HARBOR No. 2

EXHIBIT 7
Page 22

EXHIBIT 7
Page 23

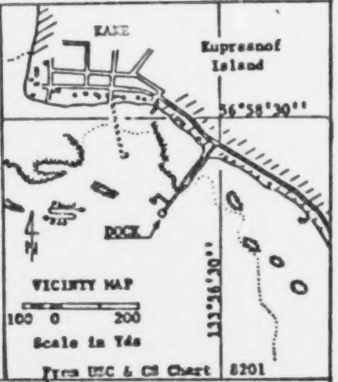
OPERATED BY CITY OF JUNEAU
HARBOR MASTER ... 24 hrs/7 days-call harbor master's office
DISTANCE FROM CITY CENTER .... 2 blocks
BERTHING ACCOM. & FEES... Space avail. basis $3.00 per ft.
TRANSIENT MOORAGE .... Yes, free 1st 24 hrs., free load & unload
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT ... No
GRID FACILITIES .... Private grid nearby -grid in Harbor #1
MARINE WAYS AVAILABLE.... Yes, in town-small craft lift nearby
REPAIR FACILITIES... Outboard shop adj. to harbor, others in town
LODGING AVAILABLE... Yes, hotels in town, motel 8 blocks
GROCERY &/OR RESTAURANT FACILITIES... Both-one block-others in town
FUEL AVAIL..... Yes/all types-Stnd/Union-at respective docks,etc.
COMMUNICATION FAC... Radiotelephone/telephone/teletype-in town telephone at float.
REMARKS...... Seaplane float available in harbor, etc.

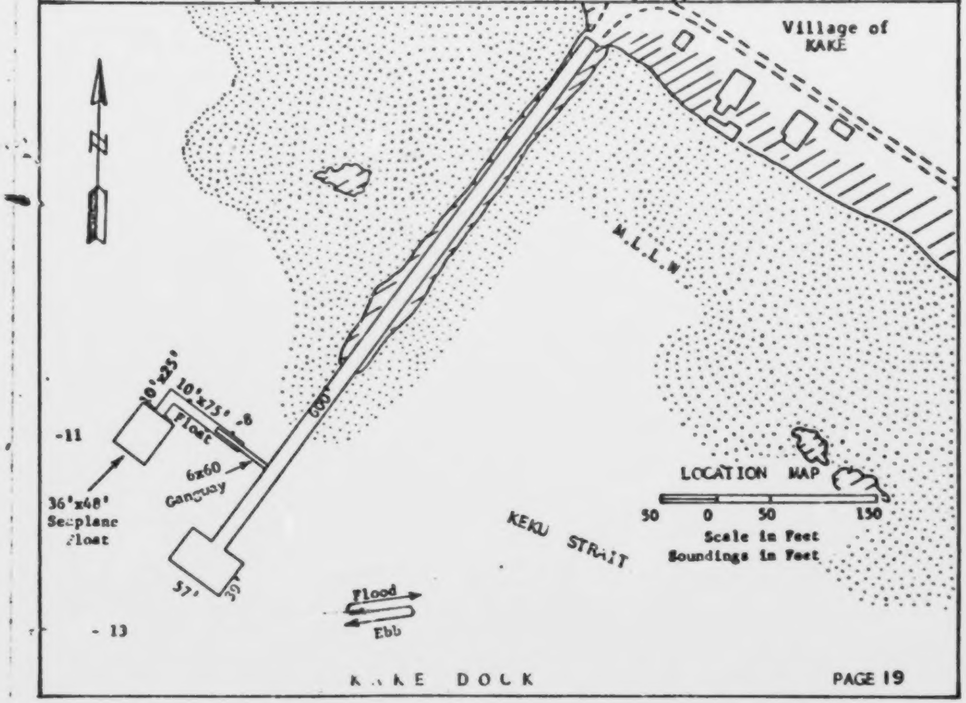
VICINITY MAP
SHOWN ON PAGE 15


SHATTUCK WAY
ALASKA STEAMSHIP DOCK
ADMIRAL WAY
SOUTH FRANKLIN STREET
JUNEAU COLD STORAGE
JUNEAU CITY FLOAT
TRANSIT MOORAGE ONLY
GASTINEAU CHANNEL
FERRY TERMINAL
City Warehouse
RAMP
AVENUE
LOCATION MAP
Scale In Feet
N

JUNEAU CITY FLOAT

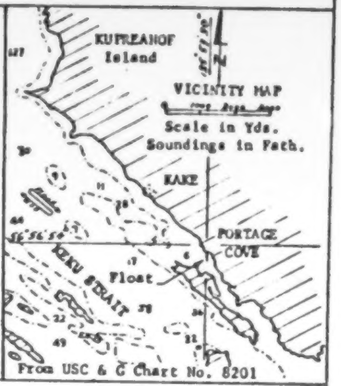
CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ..... 2 blocks
DOCKAGE FEES .... None
LIGHTING ON DOCK................ Yes
POWER ON DOCK .... Yes
POTABLE WATER ON DOCK .... No
RESTROOM FACILITIES ON DOCK ... No
GRID FACILITIES ... Yes, temporary grid at Portage Cove - also grid at cannery
MARINE WAYS AVAILABLE........... No
REPAIR FAC...... Yes, machine shop at cannery, open in season
LODGING AVAILABLE .... Yes, room and board
GROCERY &/OR RESTAURANT FACILITIES .... groceries only
FUEL AVAILABLE .... At cannery
COMMUNICATION FAC....... Telephone and radiotelephone in Kake
REMARKS......... U.S. Post Office in Kake - Dock location affords very little protection during inclement weather - numerous reefs surround the general area.


KAKE
Kupreanof Island
56°58'30"
DOCK
133°56'30"
VICINITY MAP
100 0 200
Scale in Yds
From USC & GS Chart 8201

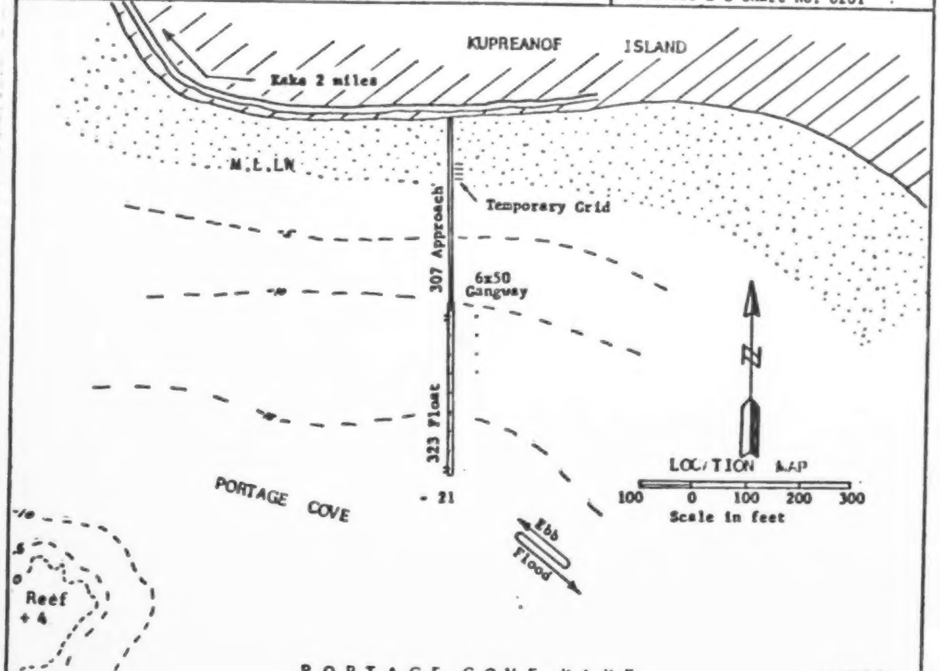

Village of KAKE
M.L.L.W.
600'
10'x25'
10'x75' .8
Float
6x60 Gangway
-11
36'x48' Seaplane Float
57'
59'
- 13
KEKU STRAIT
Flood
Ebb
LOCATION MAP
50 0 50 150
Scale in Feet
Soundings in Feet

KAKE DOCK

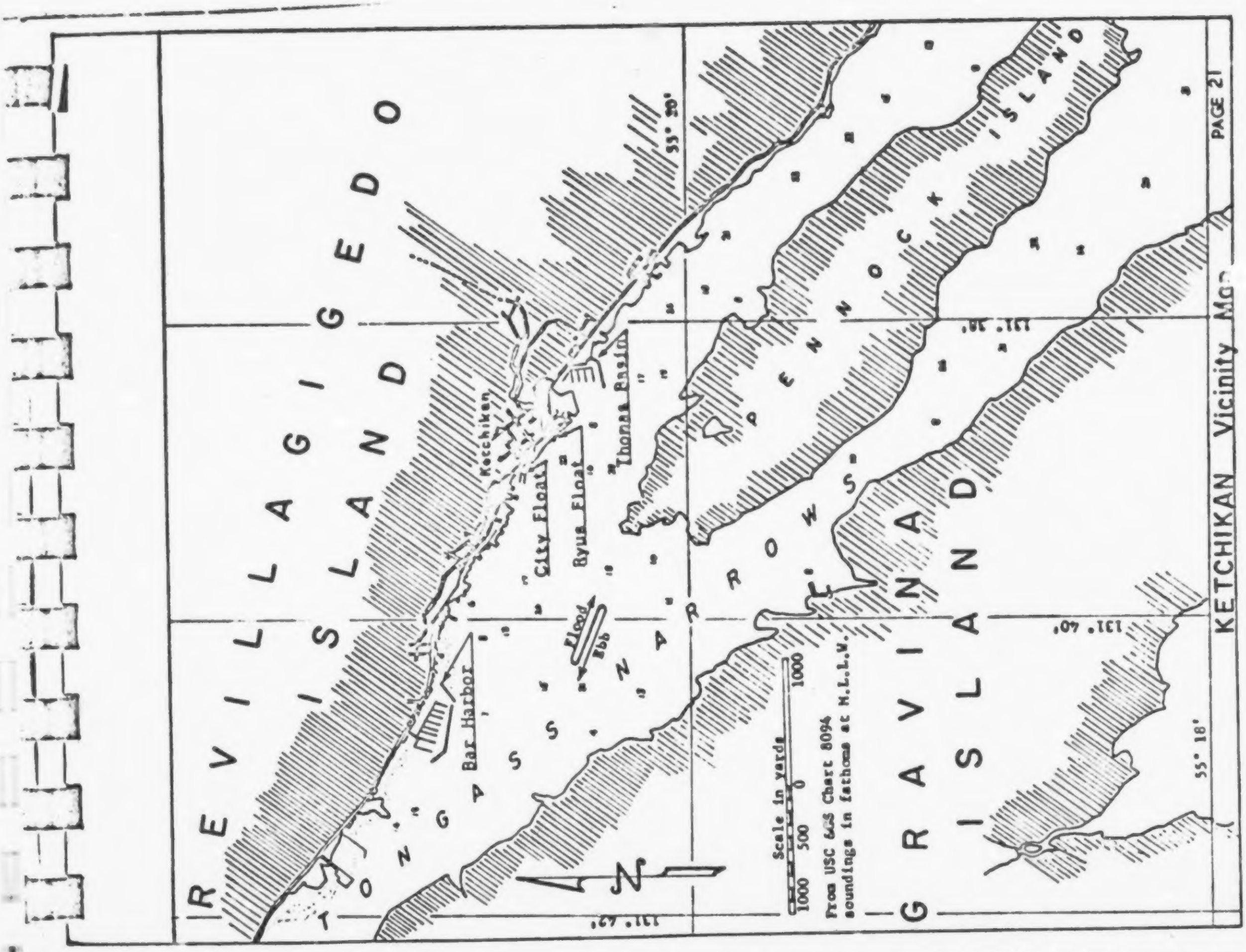
CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER..... No
DISTANCE FROM CITY CENTER ..... 2 miles to Village of Kake
BERTHING ACCOM. & FEES .... open moorage
TRANSIENT MOORAGE .... open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .. No
GRID FACILITIES... Yes, temporary-also grid at cannery
MARINE WAYS AVAILABLE.......... No
REPAIR FAC... Yes, machine shop at cannery, open in season
LODGING AVAILABLE .... Yes, room and board in Kake
GROCERY &/OR RESTAURANT FACILITIES..... groceries only
FUEL AVAILABLE .... At cannery
COMMUNICATION FAC...... Telephone and radiotelephone in Kake
REMARKS........ U.S. Post Office in Kake


KUPREANOF
Island
VICINITY MAP
Scale in Yds.
Soundings in Fath.
KAKE
PORTAGE
COVE
Float
KEKU STRAIT

From USC & G Chart No. 8201


KUPREANOF ISLAND
Kake 2 miles
M.L.L.W.
Temporary Grid
307 Approach
6x50
Gangway
323 Float
21
PORTAGE COVE
Ebb
Flood
Reef
+4
LOCATION MAP
100 0 100 200 300
Scale in feet

PORTAGE COVE, KAKE


REVILLAGIGEDO ISLAND
TONGASS NARROWS
GRAVINA ISLAND
PENNOCK ISLAND
Ketchikan
City Float
Ryus Float
Thomas Basin
Bar Harbor
Flood
Ebb
55° 20'
55° 18'
131° 38'
131° 40'
131° 42'
N
Scale in yards
1000 500 0 1000
From USC &GS Chart 8094
soundings in fathoms at M.L.L.W.
PAGE 21

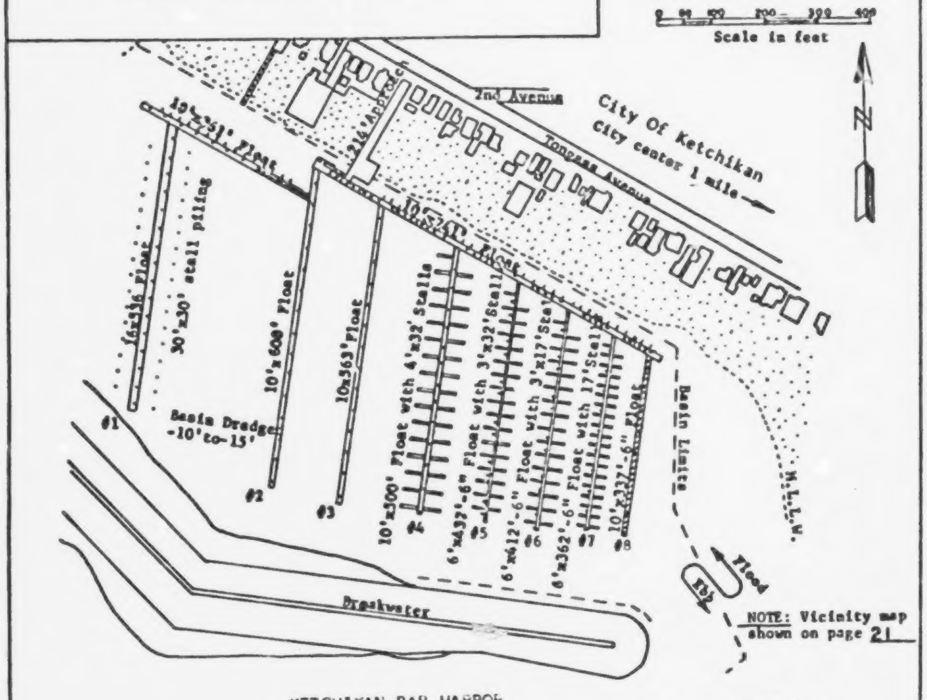
KETCHIKAN Vicinity Map

OPERATED BY CITY OF KETCHIKAN
HARBOR MASTER - yes, 7 days - on call 24 hours
DISTANCE FROM CITY CENTER - 1 mile
BERTHING ACCOM. & FEES - space available basis - $1.00/ft/yr.
TRANSIENT MOORAGE - yes, see legend
LIGHTING ON FLOAT - yes
POWER ON FLOAT - yes, 110 - metered
POTABLE WATER ON FLOAT - yes, at loading area only
RESTROOM FACILITIES ON FLOAT - yes
GRID FAC. - None at Bar Hbr.-grids available at Thomas Basin
MARINE WAYS AVAIL. - yes, private, 500 tons, adjacent to harbor
REPAIR FAC. - garages, hrdwr stores, machine shops etc.
LODGING AVAILABLE - hotels in town - motel 5 blocks north
GROCERY &/OR RESTAURANT FACILITIES - both, 4 blocks
FUEL AVAILABLE - yes, marine stations, near south end of town
COMMUNICATION FAC. - phone at Hbr. masters' office, ACS in town
REMARKS - Boat Launching Ramp Facilities available at the seaplane ramp 3 miles north of town.

LEGEND

- ▨ Transient May 1 to Nov. 1 only 14 days free
- ▩ 24 hr. free visitors area
- ▣ 4 hr. loading area
- ☐ Rental moorage

LOCATION MAP


0 50 100 200 300 400
Scale in feet
N
City Of Ketchikan
City center 1 mile
2nd Avenue
Tongass Avenue
214' Approach
10'x351' Float
10'x574' Float
16'x336' Float
30'x30' stall piling
10'x600' Float
10'x363' Float
10'x300' Float with 4'x32' Stalls
6'x432'-6" Float with 3'x32' Stalls
6'x412'-6" Float with 3'x17' Stalls
6'x362'-6" Float with 17' Stalls
10'x337'-6" Float
#1
#2
#3
#4
#5
#6
#7
#8
Basin Dredge -10' to -15'
Basin Limits
M.L.L.W.
Flood
Ebb
Breakwater

NOTE: Vicinity map shown on page 21

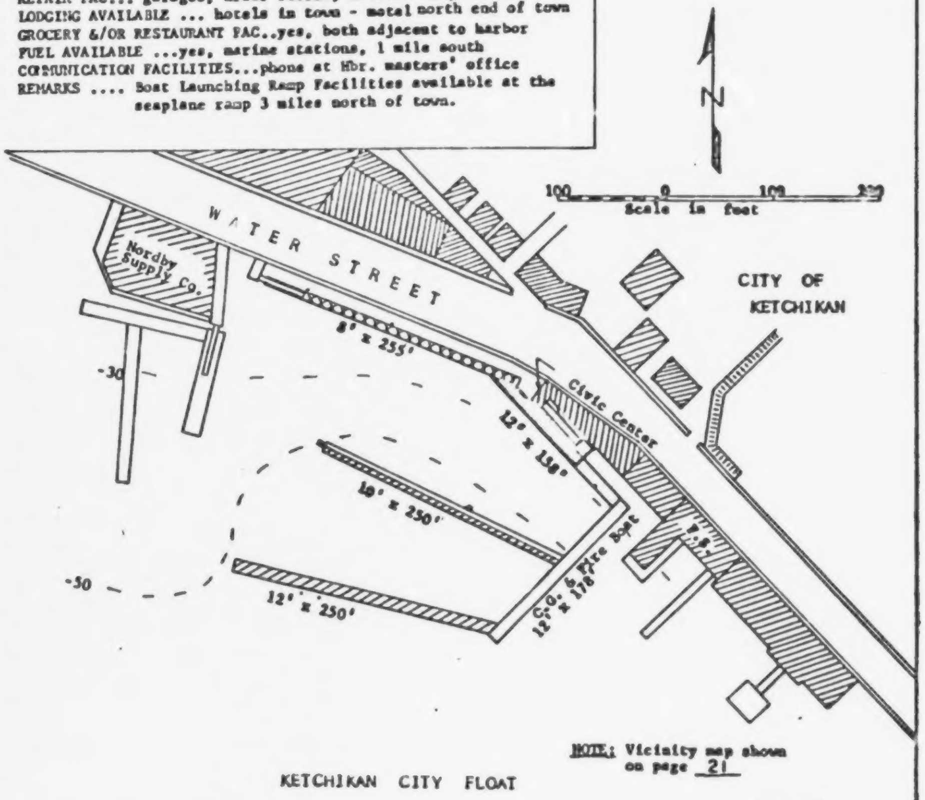
KETCHIKAN BAR HARBOR

EXHIBIT 7
Page 28

OPERATED BY CITY OF KETCHIKAN ...
HARBOR MASTER... yes, 7 days .... on call 24 hours
DISTANCE FROM CITY CENTER ... 4 blocks
BERTHING ACCOM. & FEES ...... $1.00/ft/yr.
TRANSIENT MOORAGE .... yes
LIGHTING ON FLOAT .... yes
POWER ON FLOAT .... yes - meters
POTABLE WATER ON FLOAT ...... yes, Coast Guard float
RESTROOM FACILITIES ON FLOAT .... yes
GRID FAC... None at City Float-grids available at Thomas Basin
MARINE WAYS AVAIL...yes, private, 500 tons , N. end of town
REPAIR FAC... garages, hrdwr stores, machine shops etc.
LODGING AVAILABLE ... hotels in town - motel north end of town
GROCERY &/OR RESTAURANT FAC..yes, both adjacent to harbor
FUEL AVAILABLE ...yes, marine stations, 1 mile south
COMMUNICATION FACILITIES...phone at Hbr. masters' office
REMARKS .... Boat Launching Ramp Facilities available at the seaplane ramp 3 miles north of town.

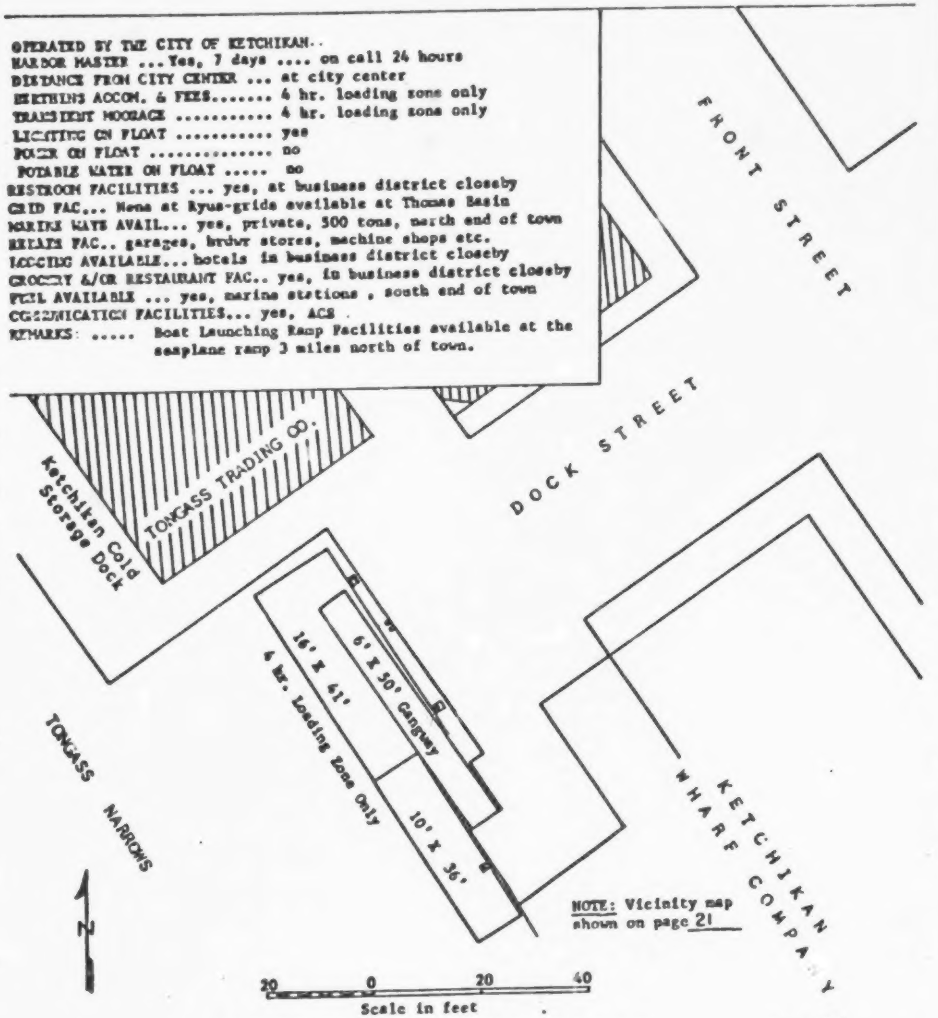
LEGEND

- ▨ Transient May 1 to Nov. 1 only 14 days free
- ▩ 24 hr. work zone
- ◫ 4 hr. loading area
- ☐ Rental moorage


N
100 0 100 200
Scale in feet
CITY OF KETCHIKAN
WATER STREET
Nordby Supply Co.
8' x 255'
Civic Center
12' x 138'
10' x 250'
12' x 250'
C.G. & Fire Boat
12' x 178'
T.B.
-30
-50

NOTE: Vicinity map shown on page 21

KETCHIKAN CITY FLOAT


FRONT STREET
DOCK STREET
TONGASS TRADING CO.
Ketchikan Cold Storage Dock
KETCHIKAN WHARF COMPANY
6' X 50' Gangway
16' X 41'
10' X 36'
4 hr. Loading Zone Only
TONGASS NARROWS
N
20
0
20
40
Scale in feet

OPERATED BY THE CITY OF KETCHIKAN..
HARBOR MASTER ...Yes, 7 days .... on call 24 hours
DISTANCE FROM CITY CENTER ... at city center
BERTHING ACCOM. & FEES....... 4 hr. loading zone only
TRANSIENT MOORAGE .... 4 hr. loading zone only
LIGHTING ON FLOAT .... yes
POWER ON FLOAT .... no
POTABLE WATER ON FLOAT ..... no
RESTROOM FACILITIES ... yes, at business district closeby
GRID FAC... None at Ryus-grids available at Thomas Basin
MARINE WAYS AVAIL... yes, private, 500 tons, north end of town
REPAIR FAC.. garages, hrdwr stores, machine shops etc.
LODGING AVAILABLE... hotels in business district closeby
GROCERY &/OR RESTAURANT FAC.. yes, in business district closeby
FUEL AVAILABLE ... yes, marine stations , south end of town
COMMUNICATION FACILITIES... yes, ACS .
REMARKS: ..... Boat Launching Ramp Facilities available at the seaplane ramp 3 miles north of town.

NOTE: Vicinity map shown on page 21

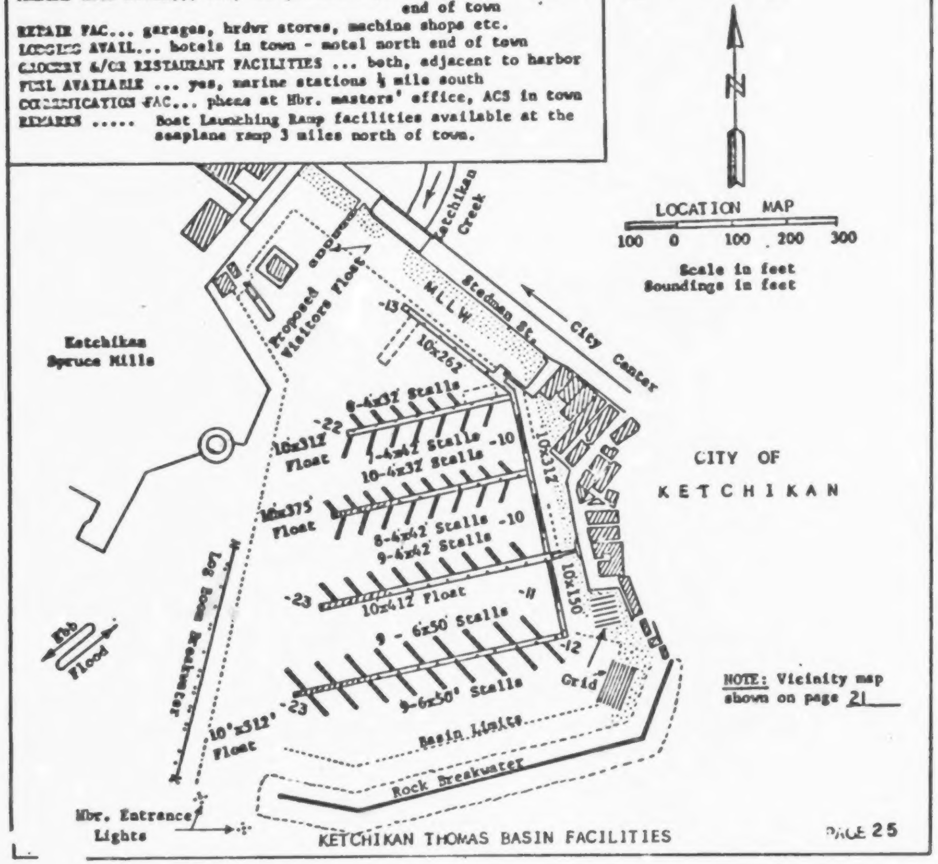
KETCHIKAN RYUS FLOAT

EXHIBIT 7

OPERATED BY CITY OF KETCHIKAN ...
HARBOR MASTER...yes, 7 days...on call 24 hours
DISTANCE FROM CITY CENTER ... 2 blocks
BERTHING ACCOM. & FEES ... space available basis - $1.00/ft/yr.
TRANSIENT MOORAGE ... yes, see legend
LIGHTING ON FLOAT ... yes
POWER ON FLOAT ...... yes, 110 - metered
POTABLE WATER ON FLOAT ... yes, at each gangway
RESTROOM FACILITIES ON FLOAT ... yes
GRID FACILITIES ..... yes
MARINE WAYS AVAIL... Yes, two private ways to 500 tons - north end of town
REPAIR FAC... garages, hrdwr stores, machine shops etc.
LODGING AVAIL... hotels in town - motel north end of town
GROCERY &/OR RESTAURANT FACILITIES ... both, adjacent to harbor
FUEL AVAILABLE ... yes, marine stations ¼ mile south
COMMUNICATION FAC... phones at Hbr. masters' office, ACS in town
REMARKS ..... Boat Launching Ramp facilities available at the seaplane ramp 3 miles north of town.

LEGEND

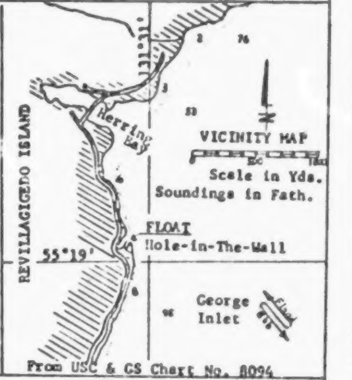
- ▨ Transient May 1 to Nov. 1 only 14 days free
- ▩ Proposed visitors float
- ◘ 4 hr. loading area
- ☐ Rental moorage


N
LOCATION MAP
100 0 100 200 300
Scale in feet
Soundings in feet
CITY OF KETCHIKAN
Ketchikan Creek
Stedman St.
City Center
MLLW
Proposed Visitors Float
-13
10x262
Ketchikan Spruce Mills
8-4x32 Stalls
-22
10x312 Float
7-4x42 Stalls -10
10-4x32 Stalls
10x375 Float
8-4x42 Stalls -10
9-4x42 Stalls
10x312
-23
10x412 Float
-11
10x150
9 - 6x50 Stalls
-12
Grid
9-6x50' Stalls
-23
10'x312' Float
Log Boom Breakwater
Ebb
Flood
Basin Limits
Rock Breakwater
Hbr. Entrance Lights

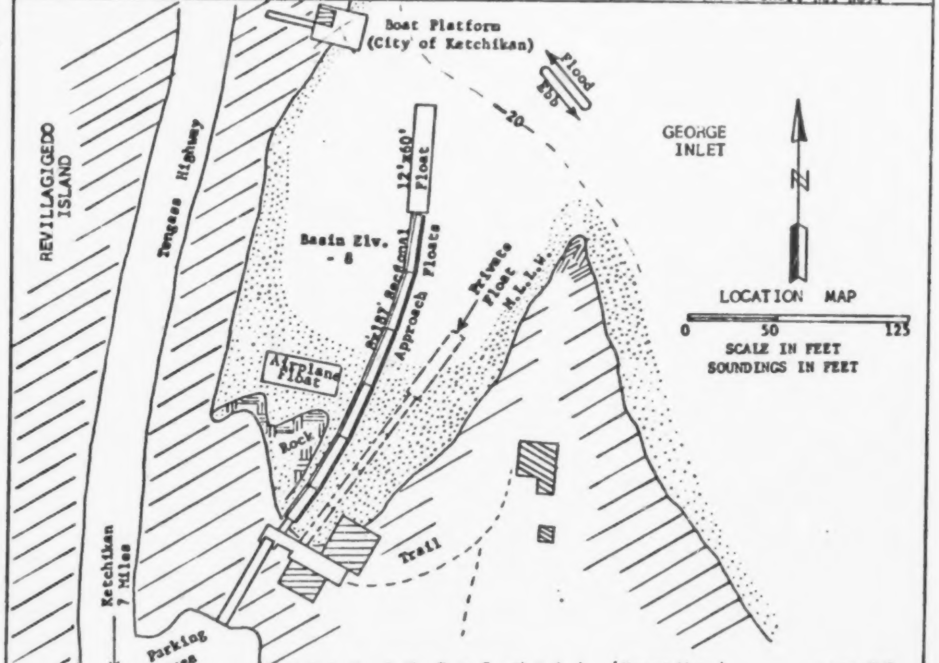
KETCHIKAN THOMAS BASIN FACILITIES

NOTE: Vicinity map shown on page 21

CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER ... No
DISTANCE FROM CITY CENTER .... 7 miles to City of Ketchikan
BERTHING ACCOM. & FEES .... open moorage
TRANSIENT MOORAGE .... open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT . No
GRID FACILITIES ....No.--grids available at Thomas Basin
MARINE WAYS AVAI... In Ketchikan, private 500 tons
REPAIR FAC......... In Ketchikan
LODGING AVAIL...... In Ketchikan
GROCERY &/OR RESTAURANT FACILITIES ... In Ketchikan
FUEL AVAILABLE .... In Ketchikan
COMMUNICATION FAC.. In Ketchikan
REMARKS..... Facility does not provide adequate protection during severe weather-boaters should exercise care when mooring overnight or for extended periods of time.

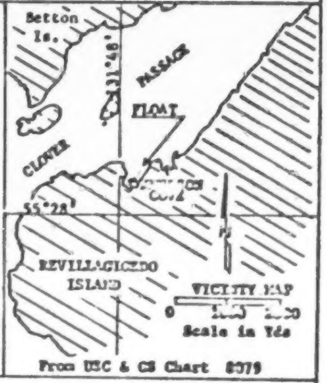

REVILLAGIGEDO ISLAND
Herring Bay
FLOAT
Hole-In-The-Wall
55°19'
George Inlet
Flood
Ebb
VICINITY MAP
Scale in Yds.
Soundings in Fath.

From USC & GS Chart No. 8094

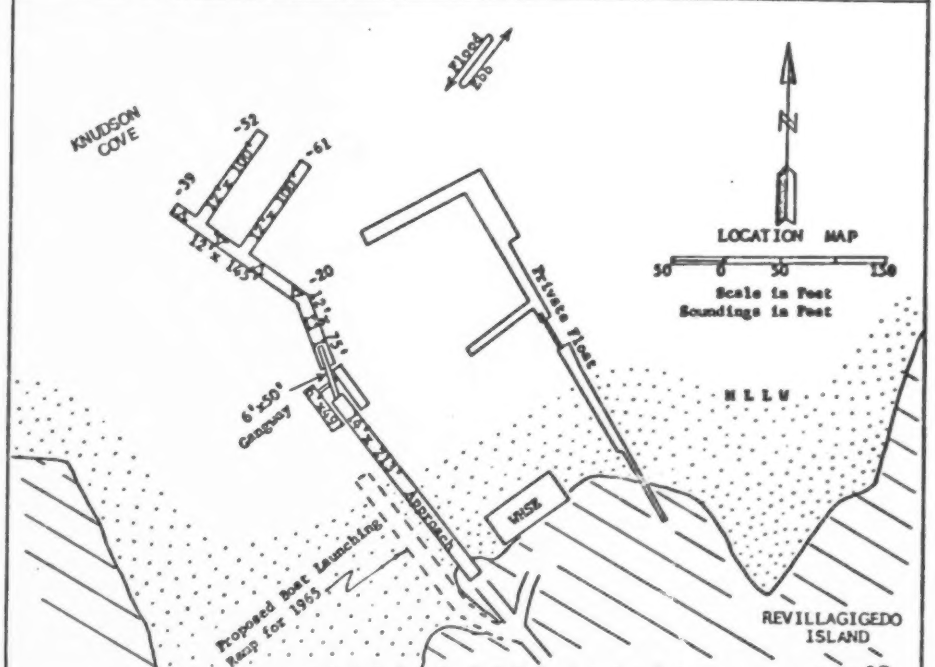

REVILLAGIGEDO ISLAND
Tongass Highway
Ketchikan 7 Miles
Parking Area
Boat Platform (City of Ketchikan)
Flood
Ebb
20
12'x60' Float
6'x80' Seasonal Approach Floats
Basin Elv. - 8
Airplane Float
Rock
Private Float
M.L.L.W.
Trail
GEORGE INLET
N
LOCATION MAP
0
50
125
SCALE IN FEET
SOUNDINGS IN FEET

HOLE-IN-THE-WALL (Ketchikan)

MAINTAINED BY DIVISION OF WATER AND HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY OF KETCHIKAN .... 14 miles
BERTHING ACCOMODATIONS & FEES .... Open moorage , no fee
TRANSIENT MOORAGE .... Open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... In Ketchikan
MARINE WAYS AVAILABLE .. In Ketchikan
REPAIR FACILITIES .... In Ketchikan
LODGING AVAILABLE .... In Ketchikan
GROCERY &/OR RESTAURANT FACILITIES ..... Groceries one block
FUEL AVAILABLE .... At private float nearby
COMMUNICATION FACILITIES ....Telephone at grocery store
REMARKS...... U.S. Post Office at grocery store. Boat launching ramp as shown is scheduled for construction in 1965. Considerable sports fishing activity in this area during summer months.


Betton Is.
131°40'
PASSAGE
FLOAT
CLOVER
55°28'
COVE
N
REVILLAGIGEDO ISLAND
VICINITY MAP
0
Scale in Yds

From USC & GS Chart 8079

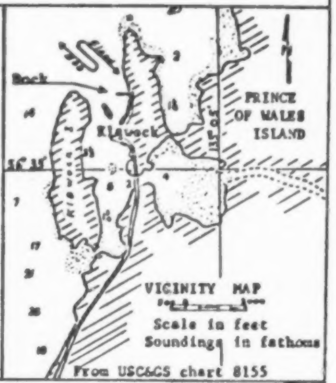

Flood
Ebb
KNUDSON COVE
-52
-61
-39
12' x 100'
12' x 100'
12' x 163'
-20
12' x 75'
6'x50' Gangway
6' x 213' Approach
Private Float
WHSE
MLLW
N
LOCATION MAP
50
0
50
150
Scale in Feet
Soundings in Feet
Proposed Boat Launching Ramp for 1965
REVILLAGIGEDO ISLAND

KNUDSON COVE FLOATS

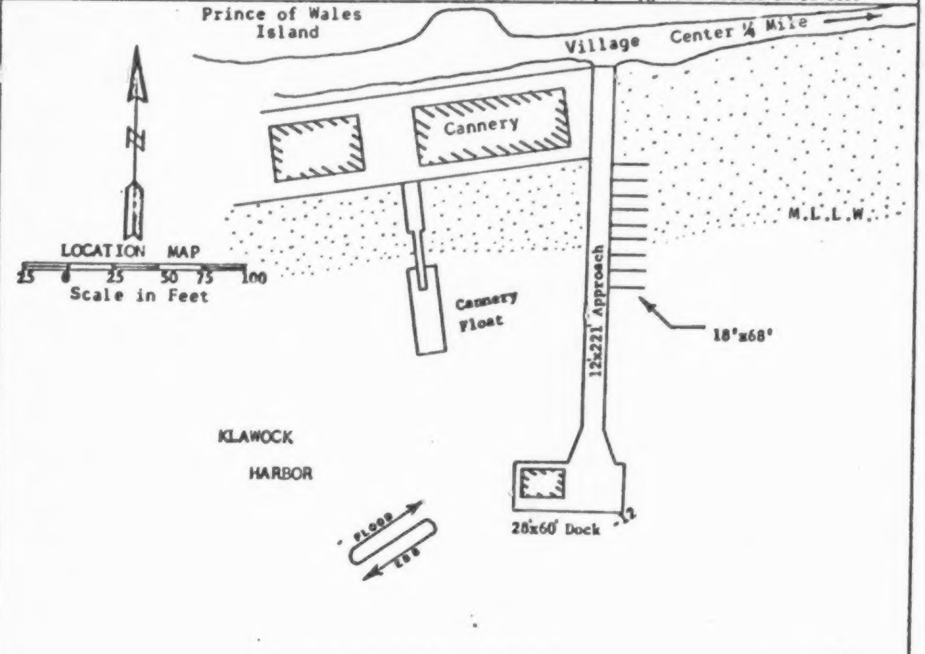
EXHIBIT 7
Page 33

OPERATED BY THE VILLAGE OF KLAWOCK...

HARBOR MASTER	No
DISTANCE FROM CITY CENTER	¼ mile
DOCKING FEES..........	None
LIGHTING ON DOCK	Yes
POWER ON DOCK	Yes
WATER ON DOCK	No
RESTROOM FACILITIES ON DOCK	No
GRID FACILITIES	As shown
MARINE WAYS AVAILABLE ..	No
REPAIR FACILITIES	Machine shop at cannery, open in season
LODGING AVAILABLE	Yes, room and board at private residence in Klawock.
GROCERY &/OR RESTAURANT FACILITIES	Groceries only
FUEL AVAILABLE..........	Fueling facilities to be installed at cannery by Sept. 1965.
COMMUNICATION FACILITIES.........	Direct service to ACS in Craig
REMARKS......	Road connection to Craig 9 miles


Dock
Klawock
PRINCE OF WALES ISLAND
55°33'

VICINITY MAP
Scale in feet
Soundings in fathoms
From USC&GS chart 8155

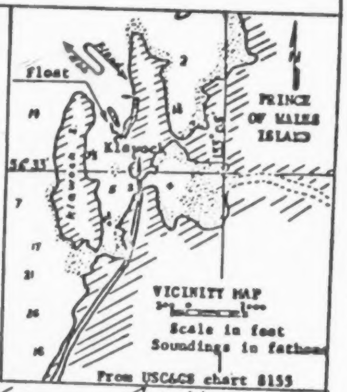

Prince of Wales Island
Village Center ¼ Mile
Cannery
M.L.L.W.
12'x221' Approach
18'x68'
Cannery Float
KLAWOCK HARBOR
28'x60' Dock
12
FLOOD
EBB
N
25
0
25
50
75
100

LOCATION MAP
Scale in Feet

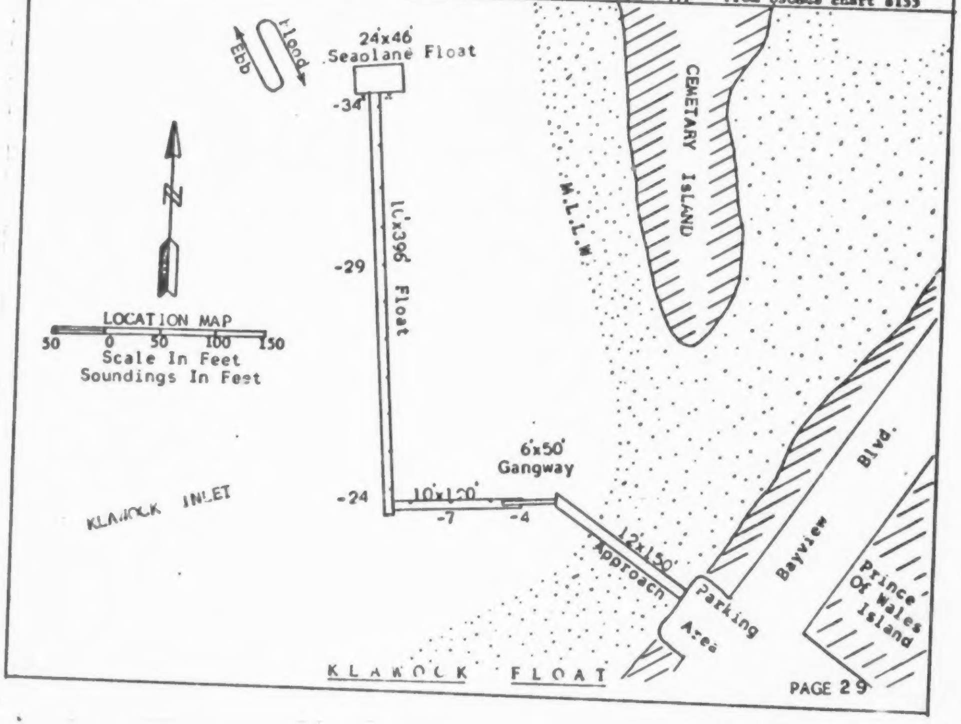
KLAWOCK DOCK

OPERATED BY THE VILLAGE OF KLAWOCK

HARBOR MASTER........... No
DISTANCE FROM CITY CENTER .... At City center
BERTHING ACCOM. & FEES............... Open moorage, no fees
LIGHTING ON FLOAT ..... Yes
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... Adjacent to Klawock Dock
MARINE WAYS AVAILABLE . No
REPAIR FACILITIES ..... Machine shop at cannery, open in season
LODGING AVAILABLE ..... Yes, room & board at private residence in Klawock
GROCERY &/OR RESTAURANT FACILITIES... Groceries only
FUEL AVAILABLE......... Fueling facilities to be installed at cannery by September 1965
COMMUNICATION FACILITIES....... Direct telephone service to ACS in Craig
REMARKS................ Road connection to Craig 9 miles


Float
Klawock
PRINCE OF WALES ISLAND
55°33'
2
19
7
17
21
26
16

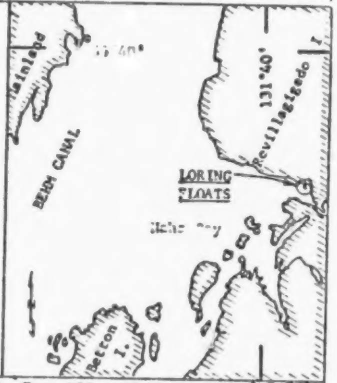
VICINITY MAP
Scale in feet
Soundings in fathoms
From USC&GS chart 8155


24x46 Seaolane Float
Flood
Ebb
-34
10x396 Float
-29
-24
10x120
-7
-4
6x50 Gangway
12x150 Approach
Parking Area
Bayview Blvd.
Prince Of Wales Island
CEMETARY IsLAND
M.L.L.W.
KLAWOCK INLET
N
LOCATION MAP
50
0
50
100
150
Scale In Feet
Soundings In Feet

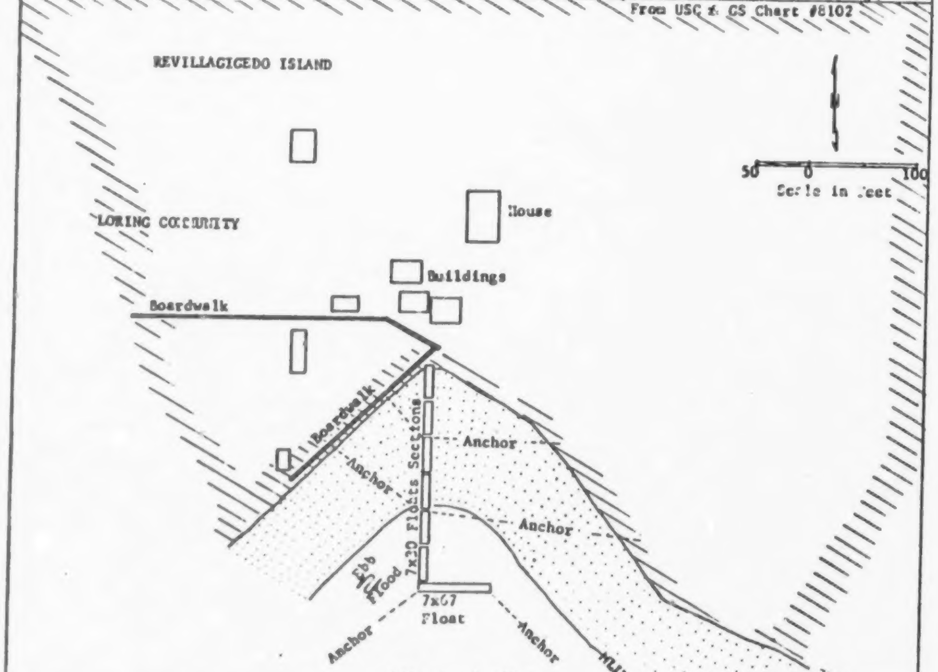
KLAWOCK FLOAT

EXHIBIT 7
Page 35

MAINTAINED BY DIVISION OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM COMMUNITY CENTER .... 2 blocks
BERTHING ACCOMODATIONS & FEES .... Open moorage, no fees
LIGHTING ON FLOAT .... No
POWER ON FLOAT........... No
POTABLE WATER ON FLOAT .. No
RESTROOM FACILITIES ON FLOAT............. No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE ... No
REPAIR FACILITIES .... No
LODGING AVAILABLE .... No
GROCERIES &/OR RESTAURANT FACILITIES .... No
FUEL AVAILABLE .... No
COMMUNICATION FACILITIES .... No
REMARKS.................. Naha Bay is a popular sports fishing and hunting area - located approx 20 miles north of Ketchikan.

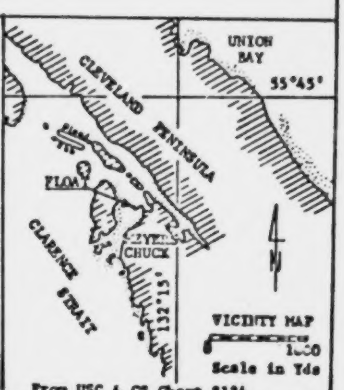

Mainland
131°40'
BEHM CANAL
Revillagigedo I.
LORING FLOATS
Naha Bay
Betton I.

From USC & GS Chart #8102

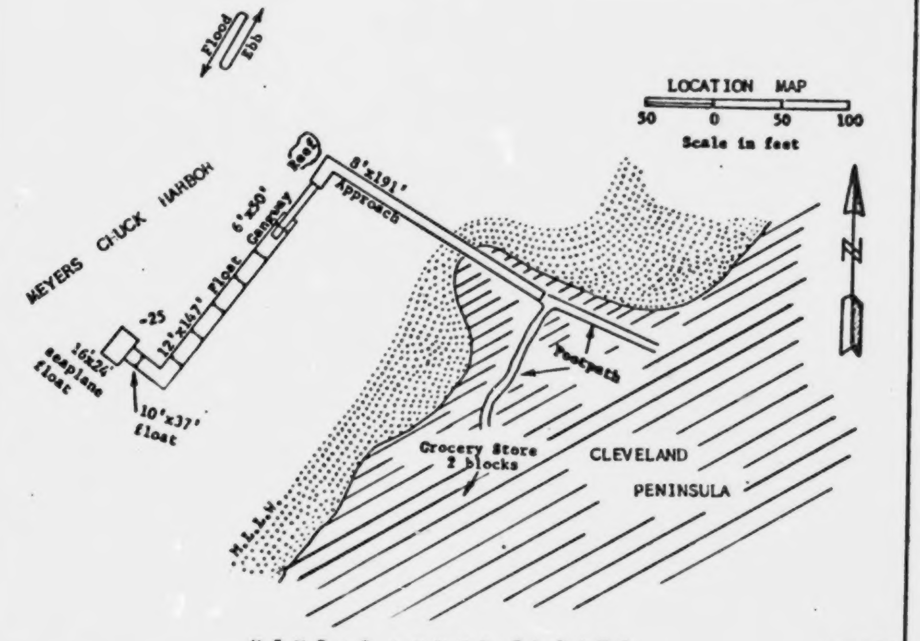

REVILLAGIGEDO ISLAND
LORING COMMUNITY
House
Buildings
Boardwalk
Boardwalk
Anchor
Anchor
Anchor
Anchor
Anchor
7x20 Floats Sections
7x67 Float
Ebb
Flood
MLLW
50
0
100
Scale in Feet

[illegible]

CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ... 2 blocks (from grocery store)
BERTHING ACCOM. & FEES....... open moorage
TRANSIENT MOORAGE .... open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT ... No - available at fish buyers float
RESTROOM FACILITIES ON FLOAT ... No
GRID FACILITIES .... No
MARINE WAYS AVAIL......... No
REPAIR FACILITIES .... No
LODGING AVAILABLE .... No
GROCERY &/OR RESTAURANT FACILITIES ... Groceries only
FUEL AVAILABLE .... at fish buyers float
COMMUNICATION FAC... yes-radiotelephone (state furnished) at
residence next to Post office
REMARKS............. U.S. Post Office at grocery store

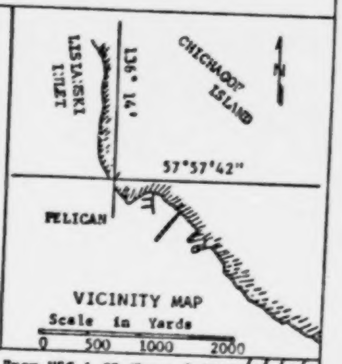

UNION BAY
55°45'
CLEVELAND PENINSULA
FLOAT
MEYERS CHUCK
CLARENCE STRAIT
132°15'
N
VICINITY MAP
0
1000
Scale in Yds

From USC & GS Chart 8124


Flood
Ebb
LOCATION MAP
50
0
50
100
Scale in feet
MEYERS CHUCK HARBOR
Rest
8'x191'
Approach
6'x50'
Gangway
12'x167' Float
-25
16x24
seaplane
float
10'x37'
float
Footpath
Grocery Store
2 blocks
CLEVELAND
PENINSULA
M.L.L.W.
N

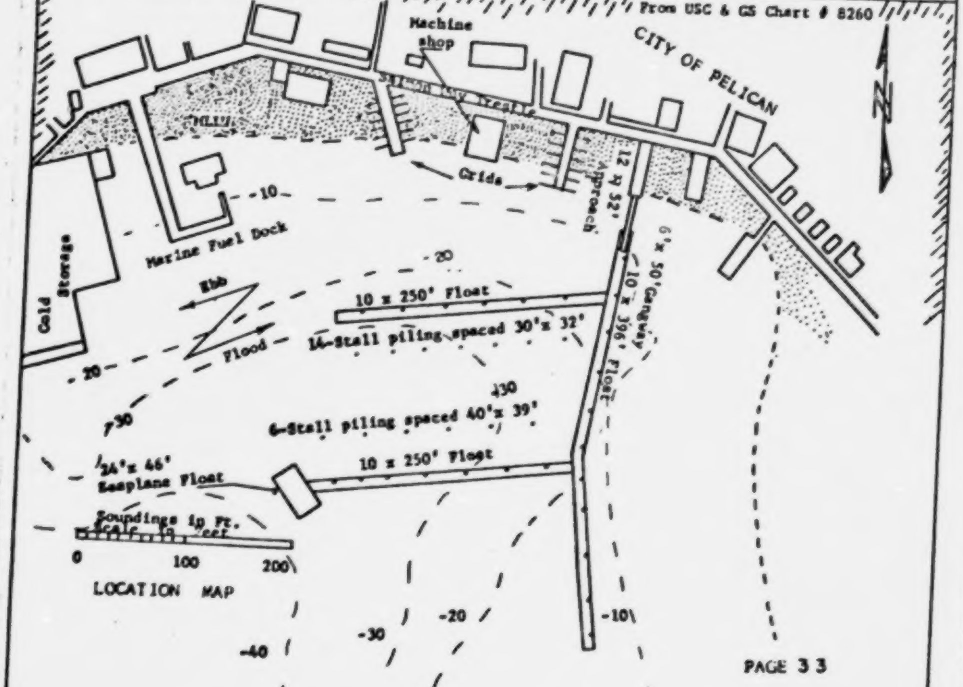
MEYERS CHUCK FLOATS

MAINTAINED BY THE CITY OF PELICAN
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ...... At city center
BERTHING ACCOMODATIONS & FEES... Open moorage, no fees
TRANSIENT MOORAGE....... Open moorage
LIGHTING ON FLOAT ...... Yes
POWER ON FLOAT .... Limited
WATER ON FLOAT .... At head of gangway
RESTROOM FACILITIES ON FLOAT ... Yes
GRID FACILITIES .... Yes, as indicated
MARINE WAYS AVAILABLE .. No
REPAIR FACILITIES ...... Machine shop as indicated
LODGING AVAILABLE....... Ltd. Apts. & room rentals in private homes.
GROCERIES &/OR RESTAURANT ..... 2 stores, one grill
FUEL AVAILABLE.......... Yes, as indicated
COMMUNICATION FACILITIES....... Direct telephone service
REMARKS.......


N
CHICHAGOF ISLAND
LISIANSKI INLET
136° 14'
57°57'42"
PELICAN

VICINITY MAP
Scale in Yards
0 500 1000 2000

From USC & GS Chart # 8260


CITY OF PELICAN
Machine shop
Salmon Bay Trestle
Grids
12 x 52' Approach
6'x 50'Gangway
10' x 396' Float
Marine Fuel Dock
Cold Storage
Ebb
Flood
10 x 250' Float
14-Stall piling spaced 30'x 32'
6-Stall piling spaced 40'x 39'
10 x 250' Float
24'x 46' Seaplane Float
-10
-20
-30
-40
20
30

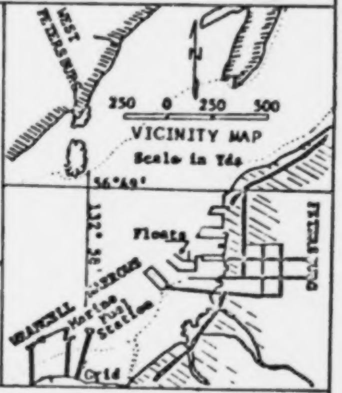
Soundings in Ft.
Scale in Feet
0 100 200

LOCATION MAP

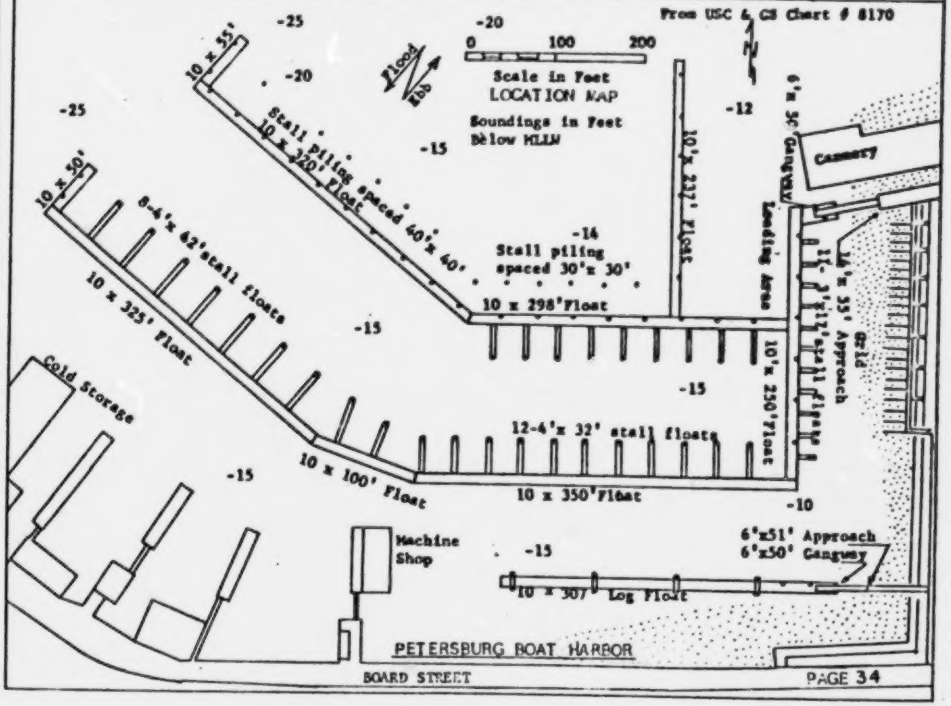
PELICAN BOAT HARBOR FACILITIES

EXHIBIT 7
Page 39

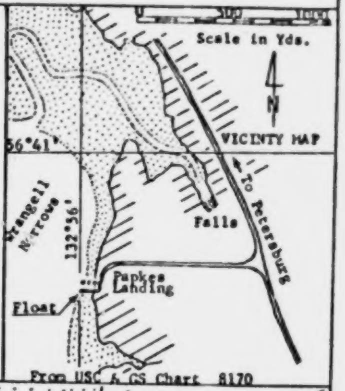
OPERATED BY CITY OF PETERSBURG
HARBOR MASTER .... Yes, on call 24 hrs. - 7 days
DISTANCE FROM CITY CENTER .... At city center
BERTHING ACCOM. & FEES.. Oct. thru April $10/mo. - open moorage remainder
TRANSIENT MOORAGE....... None designated
LIGHTING ON FLOAT ...... Yes
POWER ON FLOAT .... Yes
WATER ON FLOAT .... Yes, head of each float
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES... Yes, grid in hbr. also grid for larger vessels, see vicinity map
MARINE WAYS AVAILABLE................ Yes, vessels to 85'
REPAIR FACILITIES .. Machine shops, garages, outboard repair,etc.
LODGING AVAIL.... Yes, motel and hotel in business district
GROCERY &/OR RESTAURANT FAC.. Yes both,in business district
FUEL AVAILABLE... Union & Stnd. - See Vicinity Map
COMMUNICATION FACILITIES..... A.C.S.
REMARKS.......... Temporary boat launching at seaplane ramp 4 miles south - ramp scheduled for construction in boat harbor 1965 - Laundromat 1 block-U.S. Post Office 1 block

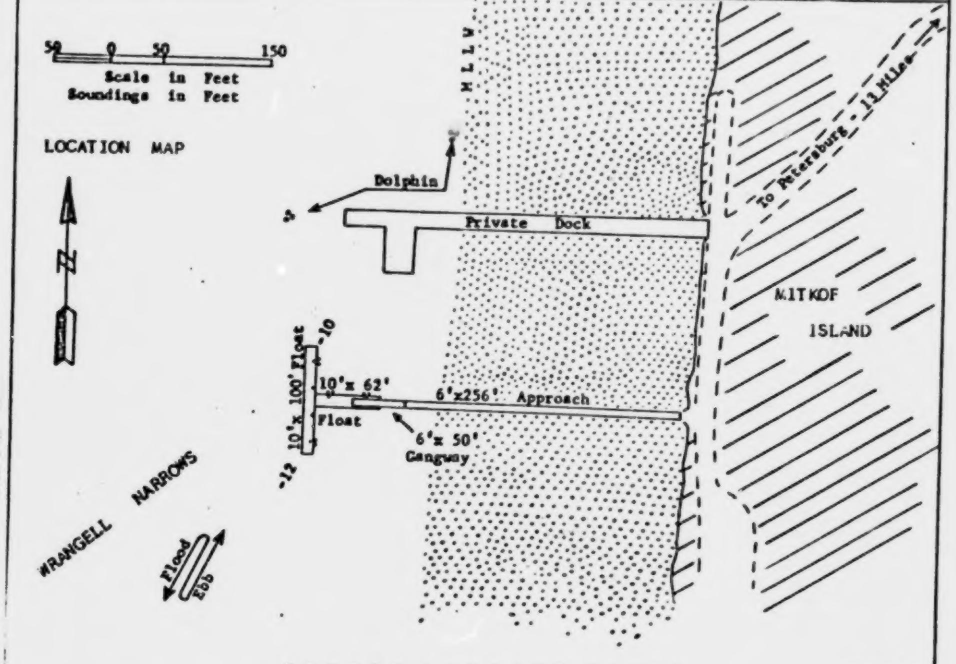

WEST PETERSBURG
N
250 0 250 500
VICINITY MAP
Scale in Yds
56°49'
132°58'
Floats
PETERSBURG
WRANGELL NARROWS
Marine Fuel Station
Grid

From USC & GS Chart # 8170


-25
-20
0 100 200
Scale in Feet
LOCATION MAP
Soundings in Feet Below MLLW
Flood
Ebb
N
-25
-20
-15
10 x 55'
Stall piling spaced 40'x 40'
10 x 320' Float
10 x 50'
8-4'x 42'stall floats
10 x 325' Float
-14
Stall piling spaced 30'x 30'
10 x 298'Float
10'x 237' Float
-12
6'x 30' Gangway
Cannery
Loading Area
16'x 55' Approach
Grid
11- 3'x12'stall floats
10'x 250'Float
-15
-15
12-4'x 32' stall floats
10 x 350'Float
-10
Cold Storage
-15
10 x 100' Float
Machine Shop
-15
10 x 307' Log Float
6'x51' Approach
6'x50' Gangway
PETERSBURG BOAT HARBOR
BOARD STREET

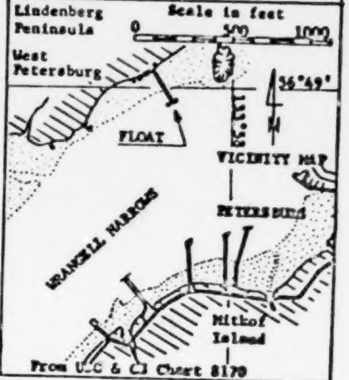
MAINTAINED BY THE DIVISION OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY OF PETERSBURG ..... 13 miles
BERTHING ACCOMODATIONS & FEES .... Open moorage
TRANSIENT MOORAGE .... Open moorage
LIGHTING ON FLOAT ...... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES.......... Available at Petersburg Boat Harbor
MARINE WAYS AVAILABLE .. In Petersburg
REPAIR FACILITIES ...... Machine shops and garage in Petersburg
LODGING AVAILABLE ...... Hotel & motel in Petersburg
GROCERY &/OR RESTAURANT FACILITIES ... In Petersburg
FUEL AVAILABLE .... In Petersburg
COMMUNICATION FACILITIES.............. ACS in Petersburg
REMARKS................. Boat launching available at seaplane ramp 4 miles from Petersburg.


0
500
1000
Scale in Yds.
N
VICINITY MAP
56°41'
Wrangell Narrows
132°56'
To Petersburg
Falls
Papkes Landing
Float
From USC & GS Chart 8170

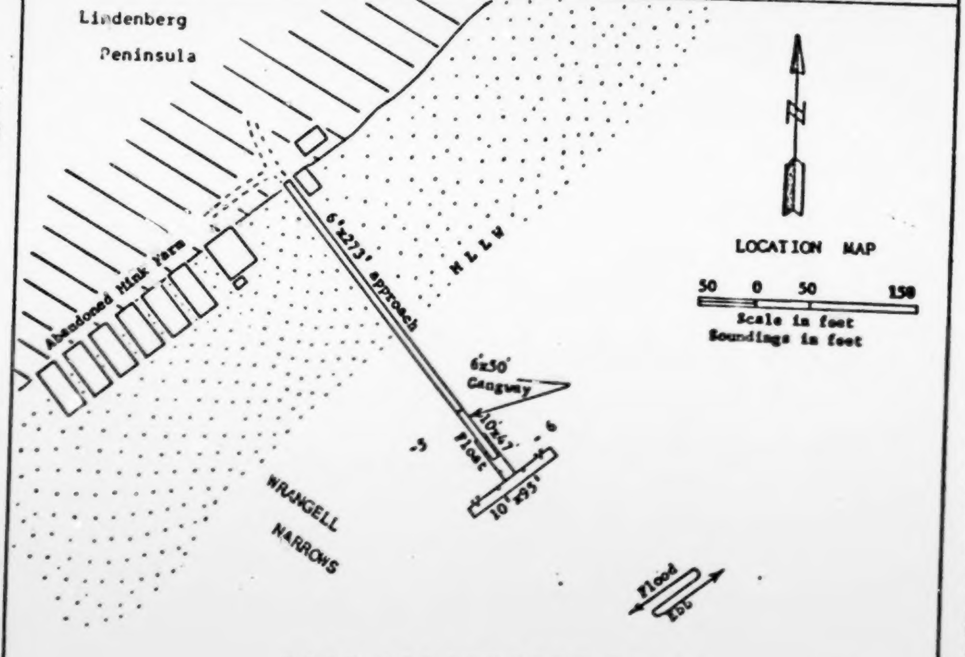

50
0
50
150
Scale in Feet
Soundings in Feet
LOCATION MAP
N
M L L W
Dolphin
Private Dock
To Petersburg - 13 Miles
MITKOF
ISLAND
-10
-12
10'x 100' Float
10'x 62'
Float
6'x256' Approach
6'x 50'
Gangway
WRANGELL NARROWS
Flood
Ebb

PAPKES-LANDING-FLOAT

MAINTAINED BY THE DIVISION OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY OF PETERSBURG..... ¼ mile
BERTHING ACCOMODATIONS & FEES......... Open moorage
TRANSIENT MOORAGE....................... Open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... Available at Petersburg Boat Harbor
MARINE WAYS AVAILABLE .... In Petersburg
REPAIR FACILITIES ...... In Petersburg
GROCERY &/OR RESTAURANT FACILITIES .. In Petersburg
FUEL AVAILABLE .... In Petersburg
COMMUNICATION FACILITIES .... ACS in Petersburg
REMARKS....... Boat launching available at seaplane ramp 4 miles
from Petersburg.
LODGING AVAILABLE........ None, hotel & motel in Petersburg


Lindenberg
Peninsula
Scale in feet
0
500
1000
West
Petersburg
56°49'
133°55'
FLOAT
VICINITY MAP
WRANGELL NARROWS
PETERSBURG
Mitkof
Island

From USC & GS Chart 8170

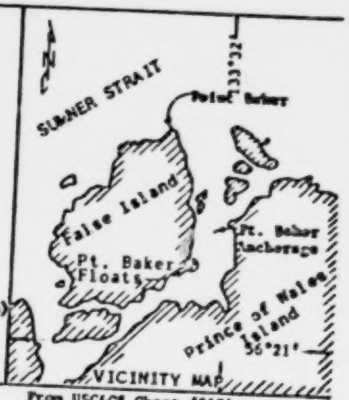

Lindenberg
Peninsula
Abandoned Mink Farm
6'x273' approach
MLLW
6x50'
Gangway
10'x67'
Float
10'x95'
-5
-6
WRANGELL
NARROWS
Flood
Ebb
LOCATION MAP
50
0
50
150
Scale in feet
Soundings in feet

WEST PETERSBURG FLOAT

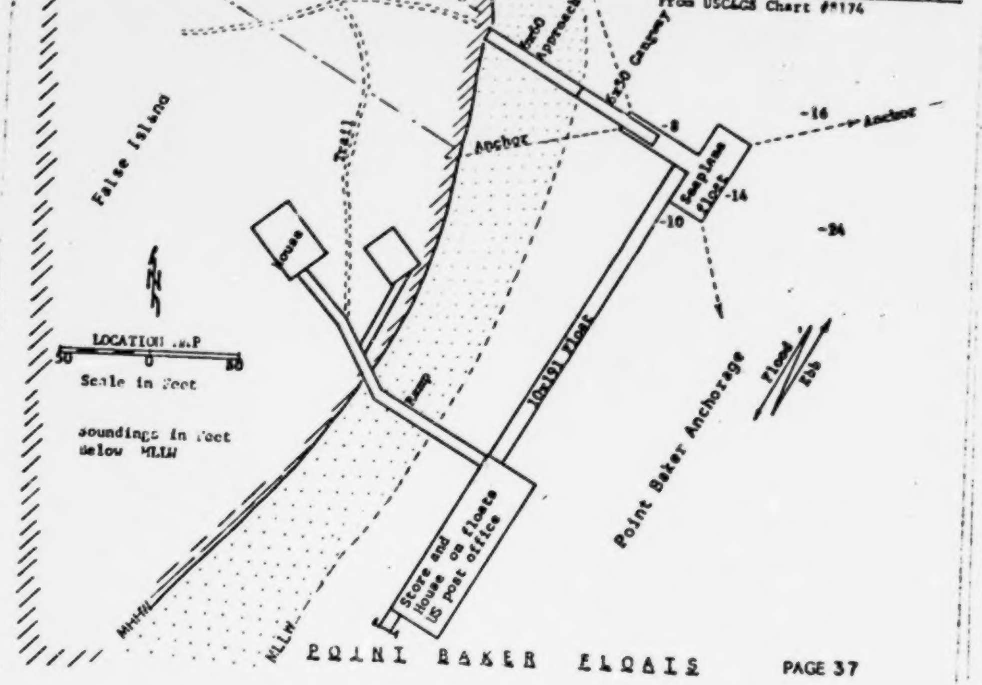
EXHIBIT 7
Page 42

OPERATED BY COMMUNITY OF POINT BAKER

HARBOR MASTER .... No
DISTANCE FROM COMMUNITY CENTER... At Community Center
BERTHING ACCOMODATION & FEES..... Open moorage, no fee
LIGHTING ON FLOAT ...... No
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT . No
RESTROOM FACILITIES ON FLOAT ... No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES .... No
LODGING AVAILABLE .... No
GROCERIES &/OR RESTAURANT ...... Groceries available at store
FUEL AVAILABLE .... Yes, at store
COMMUNICATION FACILITIES........ Yes, radiotelephone (State furn)
REMARKS......... U.S. Post Office located in store


SUMNER STRAIT
133°32'
Point Baker
False Island
Pt. Baker Floats
Pt. Baker Anchorage
Prince of Wales Island
56°21'
VICINITY MAP

From USC&GS Chart #8174


False Island
Trail
House
Anchor
8x60 Approach
5x50 Gangway
-8
-16
Anchor
Seaplane float
-14
-10
-24
10x191 Float
Ramp
Flood
Ebb
Point Baker Anchorage
Store and House on floats US post office
MHHW
MLLW
LOCATION MAP
50
0
50
Scale in feet
Soundings in feet below MLLW

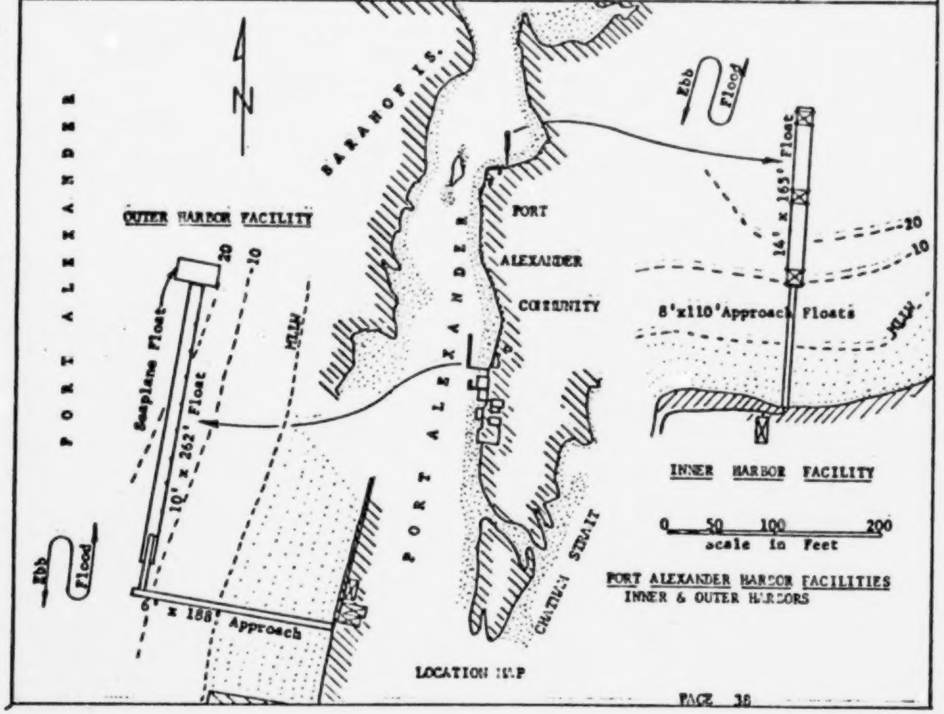
POINT BAKER FLOATS

MAINTAINED BY DIVISION OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER ..... At city center
BERTHING ACCOMODATIONS & FEES.. Open moorage/space avail. basis
TRANSIENT MOORAGE ...... Yes, no charges
LIGHTING ON FLOAT ...... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .. No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE .. No
REPAIR FACILITIES ...... None
LODGING AVAILABLE ...... No
GROCERY &/OR RESTAURANT FACILITIES...... None
FUEL AVAILABLE .... No
COMMUNICATION FACILITIES ...... Radiotelephone in town
REMARKS...... Seaplane float available in harbor, etc. Post Office in town.

Port Lucy
Puffin B.
BARANOF IS.
Larch Bay
Port Conclusion
Pt. Conclusion
PORT ALEXANDER
Cape Ommaney
CHATHAM ST.
55°40'
56° 10'
Scale in naut. miles

VICINITY MAP

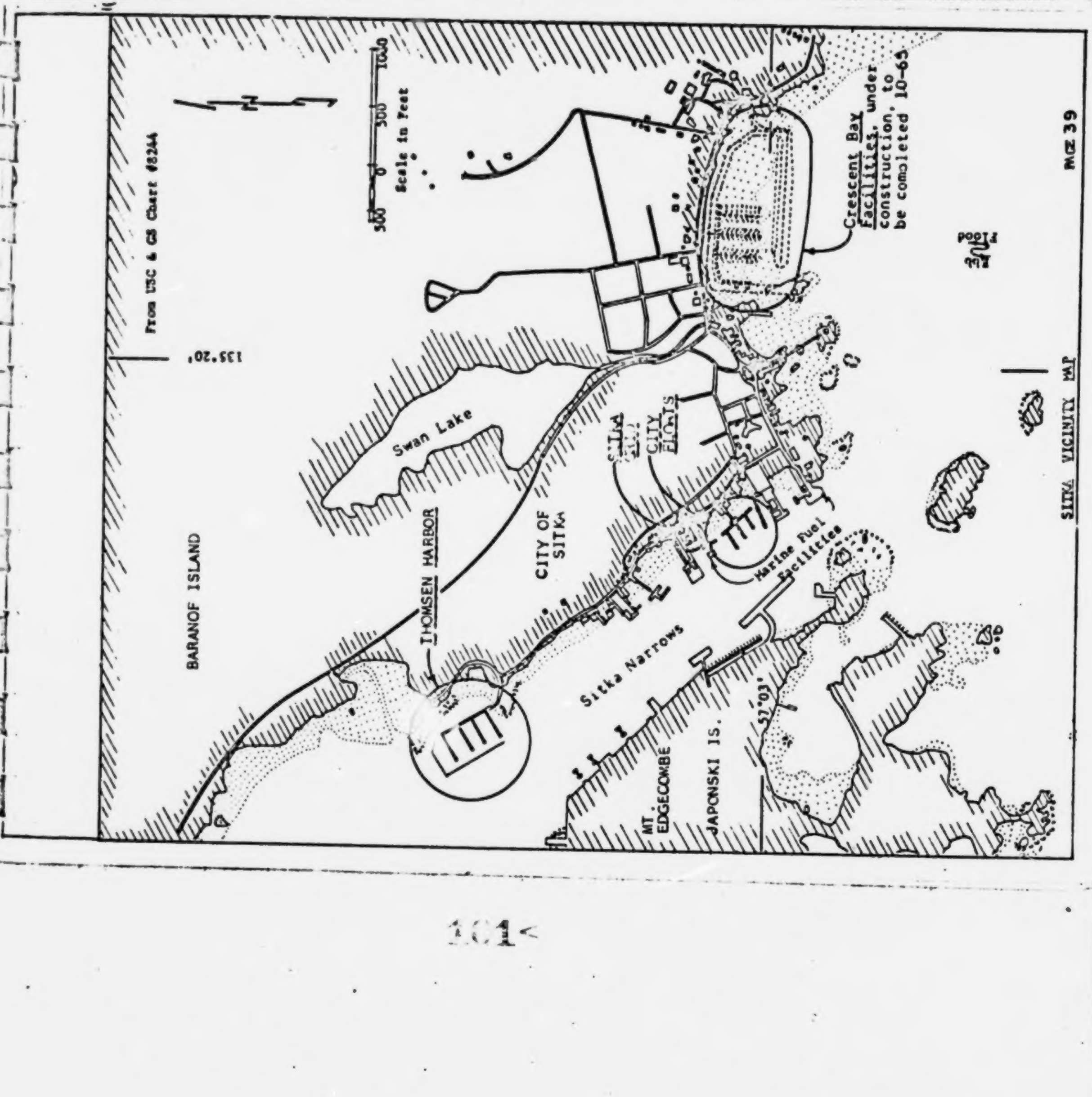
From USC&GS Chart #8652


PORT ALEXANDER
BARANOF IS.
OUTER HARBOR FACILITY
Seaplane Float
10' x 262' Float
6' x 188' Approach
20
10
MLLW
Ebb
Flood
PORT ALEXANDER
PORT
ALEXANDER
COMMUNITY
CHATHAM STRAIT
Ebb
Flood
14' x 165' Float
8'x110' Approach Floats
20
10
MLLW
INNER HARBOR FACILITY
0 50 100 200
scale in Feet
LOCATION MAP

PORT ALEXANDER HARBOR FACILITIES
INNER & OUTER HARBORS

460

EXHIBIT 7
Page 44


BARANOF ISLAND
From USC & GS Chart #8244
135°20'
Scale in Feet
500 0 500 1000
Swan Lake
THOMSEN HARBOR
CITY OF SITKA
CITY FLOATS
Sitka Narrows
Marine Fuel Facilities
Crescent Bay Facilities, under construction, to be completed 10-65
Flood
MT. EDGECOMBE
JAPONSKI IS.
57°03'
MCZ 39

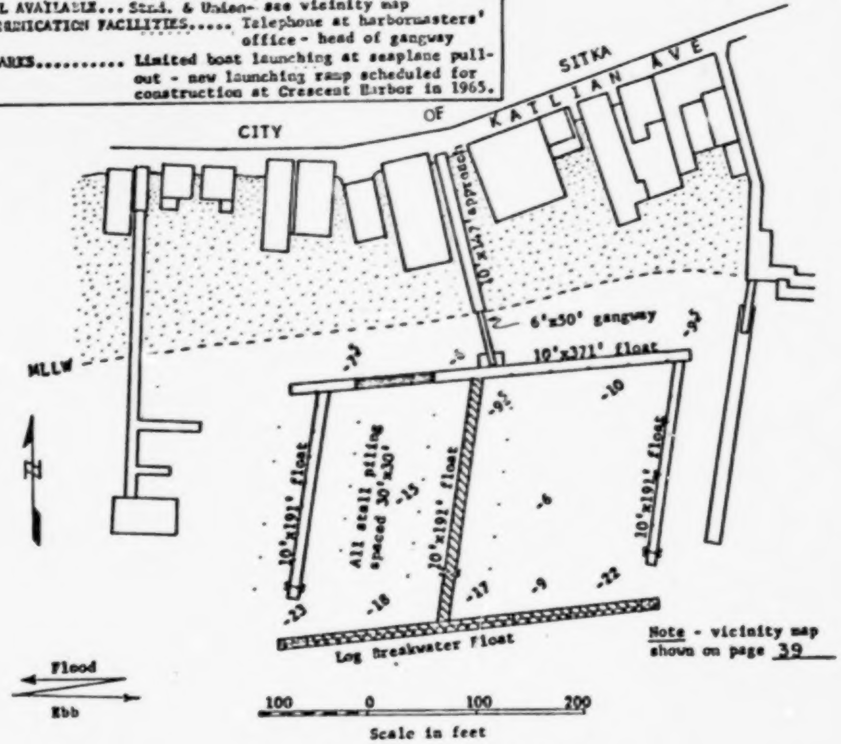
SITKA VICINITY MAP

OPERATED BY THE CITY OF SITKA

HARBOR MASTER .... Yes, on call 24 hrs./7 days
DISTANCE FROM CITY CENTER........... 2 blocks
BERTHING ACCOM. & FEES.. 20' & under 40/yr.-20'to80' $40 plus $1.00/ft. ea. ft. over 20'
TRANSIENT MOORAGE........ Yes, as shown
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... Yes, metered
POTABLE WATER ON FLOAT.. Yes
RESTROOM FACILITIES ON FLOAT .... Yes
GRID FACILITIES... At Sitka grid - see vicinity map
MARINE WAYS AVAIL... Yes, 2 miles east-vessels to 80'
REPAIR FACILITIES... Various machine shops etc. adjacent to harbor.
LODGING AVAIL... Yes,hotels in town-motel 3/4 mile west
GROCERY &/OR RESTAURANT FAC..Both,along waterfront near hbr
FUEL AVAILABLE... Stnd. & Union- see vicinity map
COMMUNICATION FACILITIES..... Telephone at harbormasters' office - head of gangway
REMARKS........... Limited boat launching at seaplane pull-out - new launching ramp scheduled for construction at Crescent Harbor in 1965.

LEGEND

☐ Rental moorage
▨ Transient May thru October
▩ Transient year around
☐ Loading zone

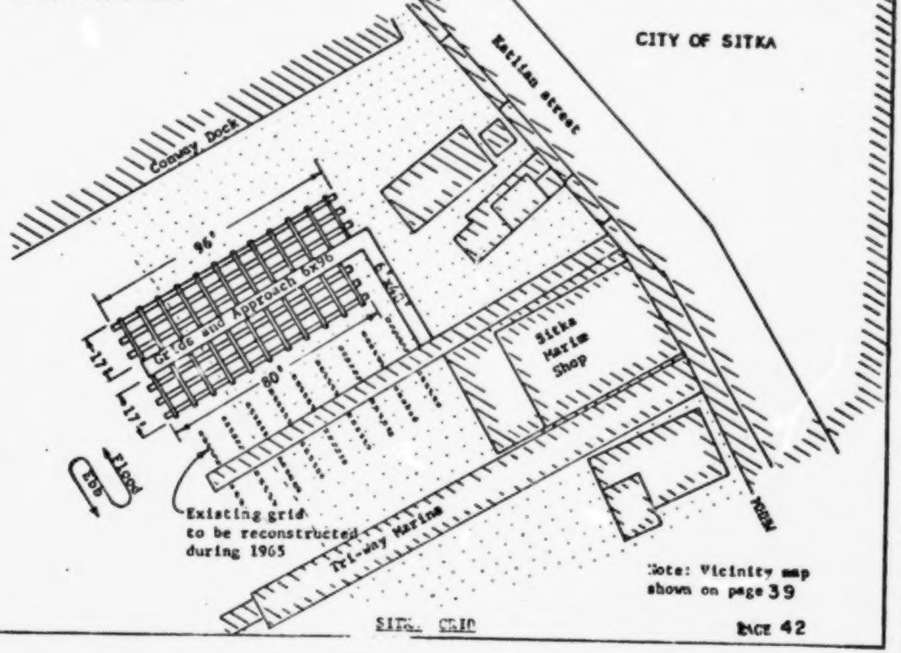

SITKA
KATLIAN AVE
CITY
OF
10'x147' approach
6'x30' gangway
10'x371' float
MLLW
10'x191' float
10'x191' float
10'x191' float
All steel piling spaced 30'x30'
Log Breakwater Float
-6
-9
-10
-13
-15
-18
-17
-9
-22
-23
-6
-9
N
Flood
Ebb
100
0
100
200
Scale in feet
Note - vicinity map shown on page 39

SITKA CITY FLOAT

OPERATED BY THE [illegible]
HARBOR MASTER .... Yes, on call 24 hrs./ 7 days
DISTANCE FROM CITY CENTER .... 3 blocks
BERTHING ACCOM. & FEES..... No fees
LIGHTING AT GRID............ Yes
POWER AT GRID .... Yes, free
POTABLE WATER AT GRID ..... Yes
RESTROOM FACILITIES ON GRID .... No
GRID FACILITIES .... As shown
MARINE WAYS AVAIL... Yes, 2 miles east-vessels to 80'
REPAIR FACILITIES .. Various machine shops etc. along waterfront to town
LODGING AVAIL....... Yes, hotels in town-motel 3/4 mile west
GROCERY &/OR RESTAURANT FAC.. Both, along waterfront to town
FUEL AVAILABLE...... Stnd. & Union - see vicinity map
COMMUNICATION FACILITIES..... None at grid, ACS in town
REMARKS.... Limited boat launching at seaplane pullout new launching ramp scheduled for construction at Crescent Harbor in 1965.

N
VICINITY MAP
25 0 25
Scale in Feet

NOTE: Grids on 4% grade, Cap elevations progress from approx. 0± to 4± feet MLLW.


CITY OF SITKA
Katlian street
Conway Dock
96'
Grids and Approach 6x96
6x40
17'
17'
80'
Sitka Marine Shop
Flood
Ebb
Tri-way Marine
MOBM
Existing grid to be reconstructed during 1965

Note: Vicinity map shown on page 39

SITKA GRID

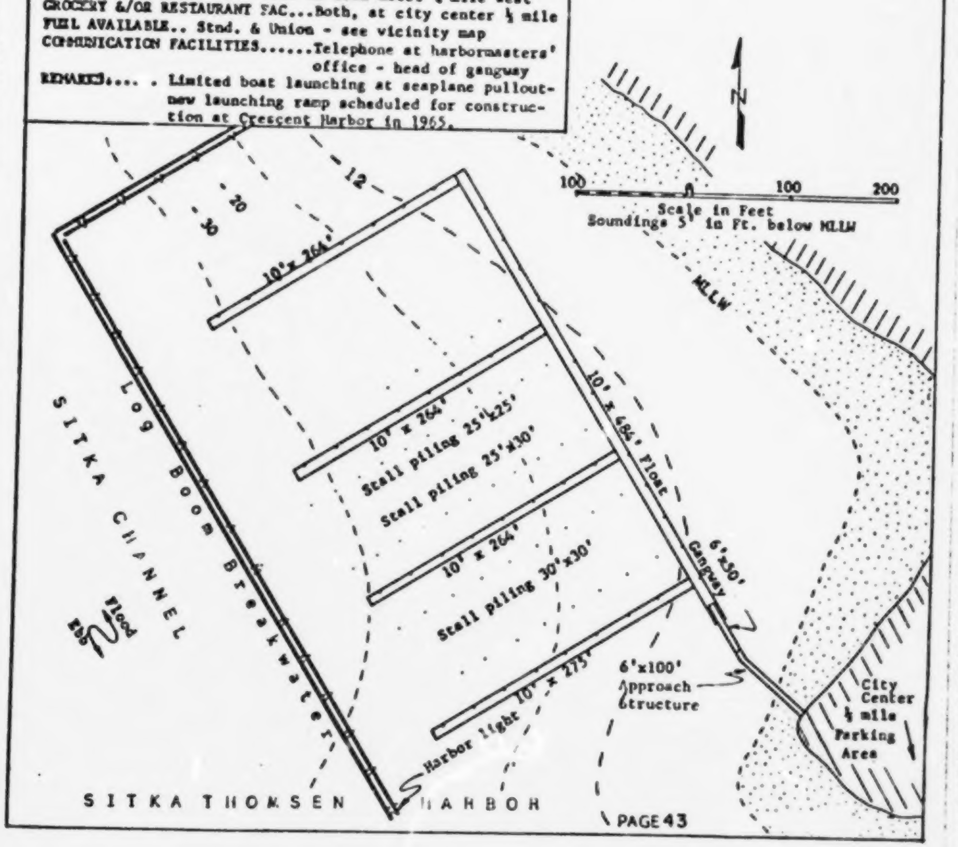
PAGE 42

EXHIBIT 7
Page 47

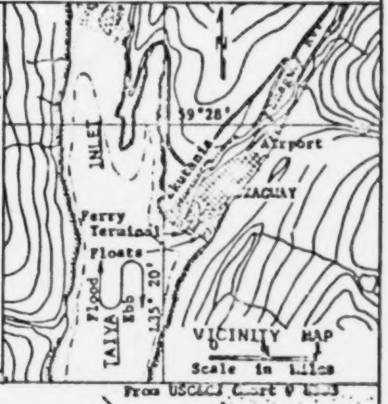
OPERATED BY THE CITY OF SITKA

HARBOR MASTER .... Yes, on call 24 hrs./7 days
DISTANCE FROM CITY CENTER .... ¼ mile
BERTHING ACCOM. & FEES... 20' & under 40/yr.-20' to 80' $40 plus 1.00/ft. ea. ft. over 20'
TRANSIENT MOORAGE .... No
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... Yes, metered
POTABLE WATER ON FLOAT .. Yes
RESTROOM FACILITIES ON FLOAT .... Yes
GRID FACILITIES ... At Sitka grid - see vicinity map
MARINE WAYS AVAIL.. Yes, 2½ miles east vessels to 80'
REPAIR FACILITIES.. Various machine shops etc. along waterfront to town
LODGING AVAIL... Yes, hotels in town-motel ¼ mile west
GROCERY &/OR RESTAURANT FAC...Both, at city center ¼ mile
FUEL AVAILABLE.. Stnd. & Union - see vicinity map
COMMUNICATION FACILITIES......Telephone at harbormasters' office - head of gangway
REMARKS.... . Limited boat launching at seaplane pullout-new launching ramp scheduled for construction at Crescent Harbor in 1965.

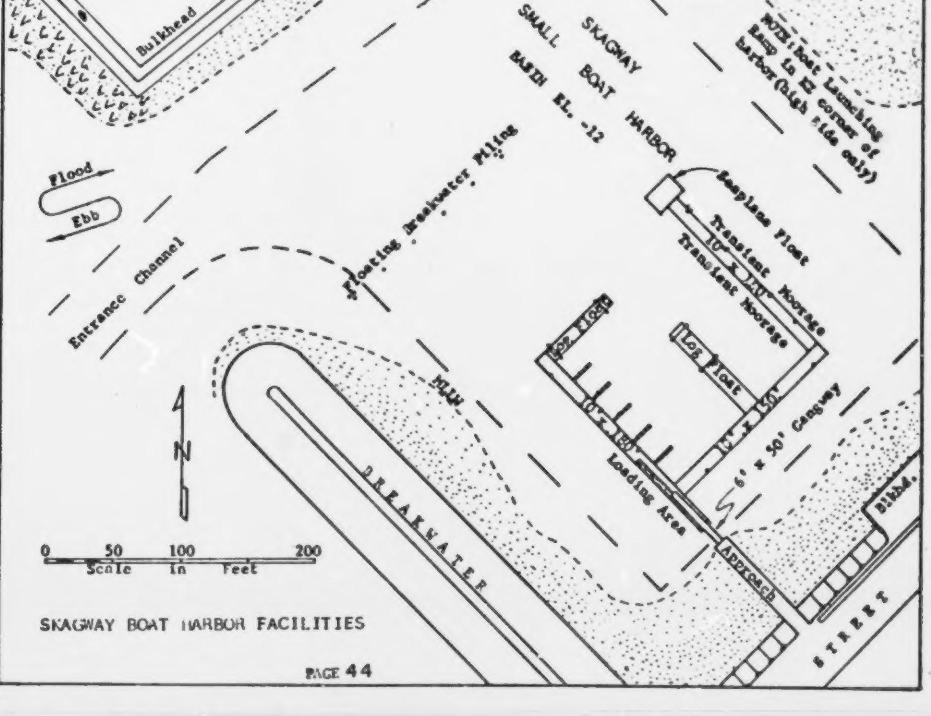
NOTE Vicinity map shown on page 39


N
100
0
100
200
Scale in Feet
Soundings 5' in Ft. below MLLW
MLLW
12
20
30
10' x 264'
10' x 264'
Stall piling 25'x25'
Stall piling 25'x30'
10' x 264'
Stall piling 30'x30'
10' x 275'
10' x 484' Float
6'x50' Gangway
6'x100' Approach Structure
City Center ¼ mile
Parking Area
Log Boom Breakwater
Harbor light
SITKA CHANNEL
Flood
Ebb
SITKA THOMSEN HARBOR
PAGE 43

OPERATED BY CITY OF SKAGWAY
HARBOR MASTER .... Yes,24 hrs.7 days check bulletin board on approach
DISTANCE FROM CITY CENTER.......... ¼ mile
BERTHING ACCOM. & FEES..Space avail. basis 0-16'-10/per yr. 16-26'-20/per yr. 26-38'-30/per yr. 38-45'-40/yr.
TRANSIENT MOORAGE.... Yes, free 1st two weeks
LIGHTING ON FLOAT ... Yes
POWER ON FLOAT ...... No -
WATER ON FLOAT ...... Yes - potable/summer months only
RESTROOM FAC. ON FLOAT............. No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE .... No
REPAIR FAC. .... Machine shop/garage - in town
GROCERY &/OR RESTAURANT FAC....... Yes, both in town
FUEL AVAILABLE.. Yes, some types-Stnd at loading area in harbor
COMMUNICATION FAC.. Radiotelephone/phone/teletype in twon
REMARKS..... Seaplane float avail. in harbor, etc. Ferry service avail. to ports south. R.R. service to Whitehorse Y.T.

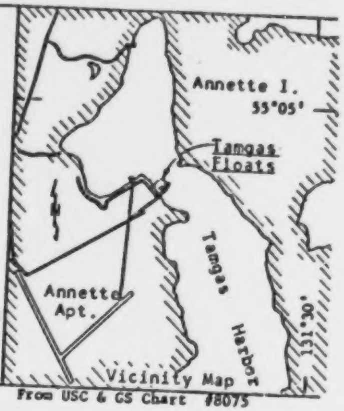

INLET
59°28'
Airport
SKAGWAY
Ferry Terminal
Floats
135° 20'
Flood
Ebb
TAIYA
VICINITY MAP
0 1
Scale in Miles

From USGC Chart

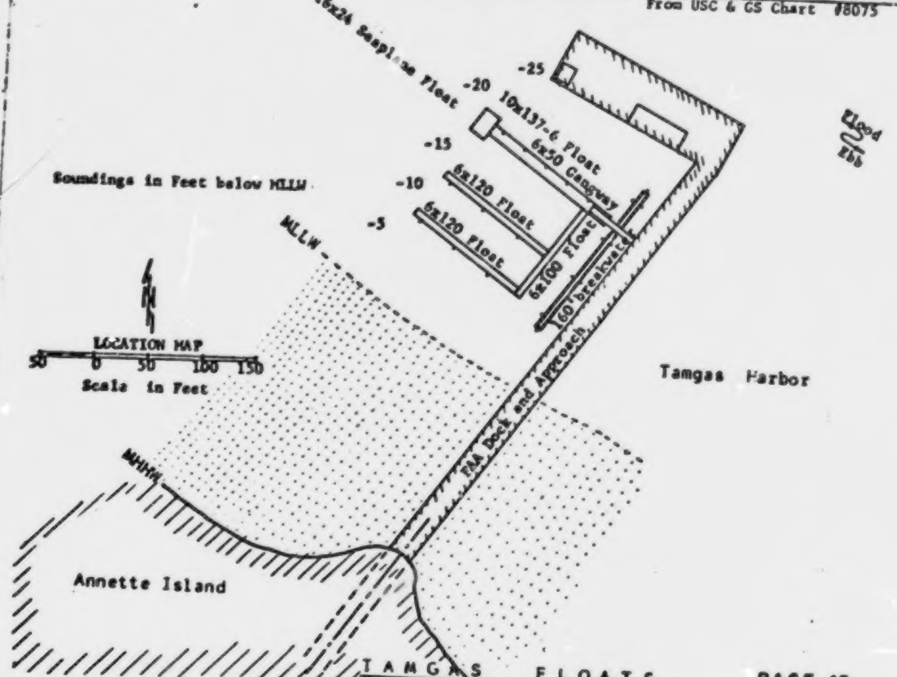

Bulkhead
SKAGWAY
SMALL BOAT HARBOR
BASIN EL. -12
NOTE: Boat Launching Ramp in NE corner of harbor (high tide only)
Flood
Ebb
Entrance Channel
Floating Breakwater Piling
Seaplane Float
Transient Moorage
10' x 130'
Transient Moorage
Log Float
Log Float
10' x 130'
10' x 180'
6' x 50' Gangway
MLLW
Loading Area
Approach
Blkhd.
BREAKWATER
STREET
N
0 50 100 200
Scale in Feet

SKAGWAY BOAT HARBOR FACILITIES

OPERATED BY ANNETTE OUTBOARD BOATING CLUB
HARBOR MASTER......... No - contact club chairman
DISTANCE FROM COMMUNITY CENTER ..... 3 miles from airport
BERTHING ACCOMODATION & FEES......... Yes
TRANSIENT MOORAGE .... Yes
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES ...... No - emergency repair see FAA or CG
LODGING AVAILABLE ...... Yes, at airport
GROCERIES &/OR RESTAURANT .... Yes, both at airport
FUEL AVAILABLE .... Fuel available at airport
COMMUNICATION FACILITIES ....Telephone service at airport
REMARKS...... Boat launching at Coast Guard gravel seaplane
ramp ¼ mile. U.S. Post Office at airport.


Annette I.
55°05'
Tamgas Floats
Tamgas Harbor
Annette Apt.
131°30'

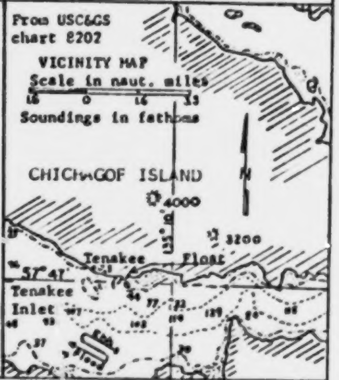
Vicinity Map
From USC & GS Chart #8075

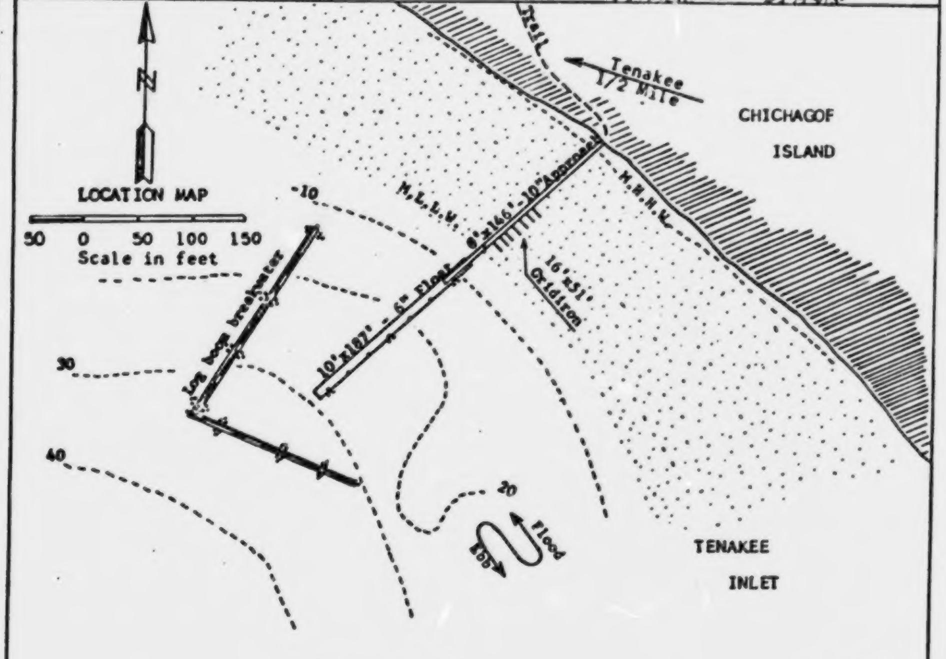

16x24 Seaplane Float
-25
-20
-15
-10
-5
10x137-6 Float
6x50 Gangway
6x120 Float
6x120 Float
6x100 Float
160' breakwater
FAA Dock and Approach
Flood
Ebb
Soundings in Feet below MLLW
MLLW
MHHW
LOCATION MAP
50 0 50 100 150
Scale in Feet
Tamgas Harbor
Annette Island

TAMGAS FLOATS

EXHIBIT 7
Page 50

CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER ...... No
DISTANCE FROM CITY CENTER ...... ½ mile
BERTHING ACCOM. & FEES.......... open moorage
TRANSIENT MOORAGE .... open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .. No
GRID FACILITIES .... Yes, as shown
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES .... No
LODGING AVAILABLE .... Yes, cabins in Tenakee
GROCERY &/OR RESTAURANT FACILITIES.... both in Tenakee
FUEL AVAILABLE .... marine fuel station Tenakee
COMMUNICATION FAC.... yes, radiotelephone (state furnished)at grocery store
REMARKS......... U.S. Post Office at grocery store in Tenakee.
Limited hot spring facilities available.


From USC&GS
chart 8202
VICINITY MAP
Scale in naut. miles
16
0
16
33
Soundings in fathoms
CHICHAGOF ISLAND
4000
3200
Tenakee
Float
57°47'
Tenakee
Inlet
Ebb
Flood


N
LOCATION MAP
50
0
50
100
150
Scale in feet
Trail
Tenakee
1/2 Mile
CHICHAGOF
ISLAND
M.H.H.W.
M.L.L.W.
8'x146' - 10" Approach
16'x51' Gridiron
10'x187' - 6" Float
Log boom breakwater
-10
20
30
40
Flood
Ebb
TENAKEE
INLET

TENAKEE FLOATS

EXHIBIT 7
Page 51

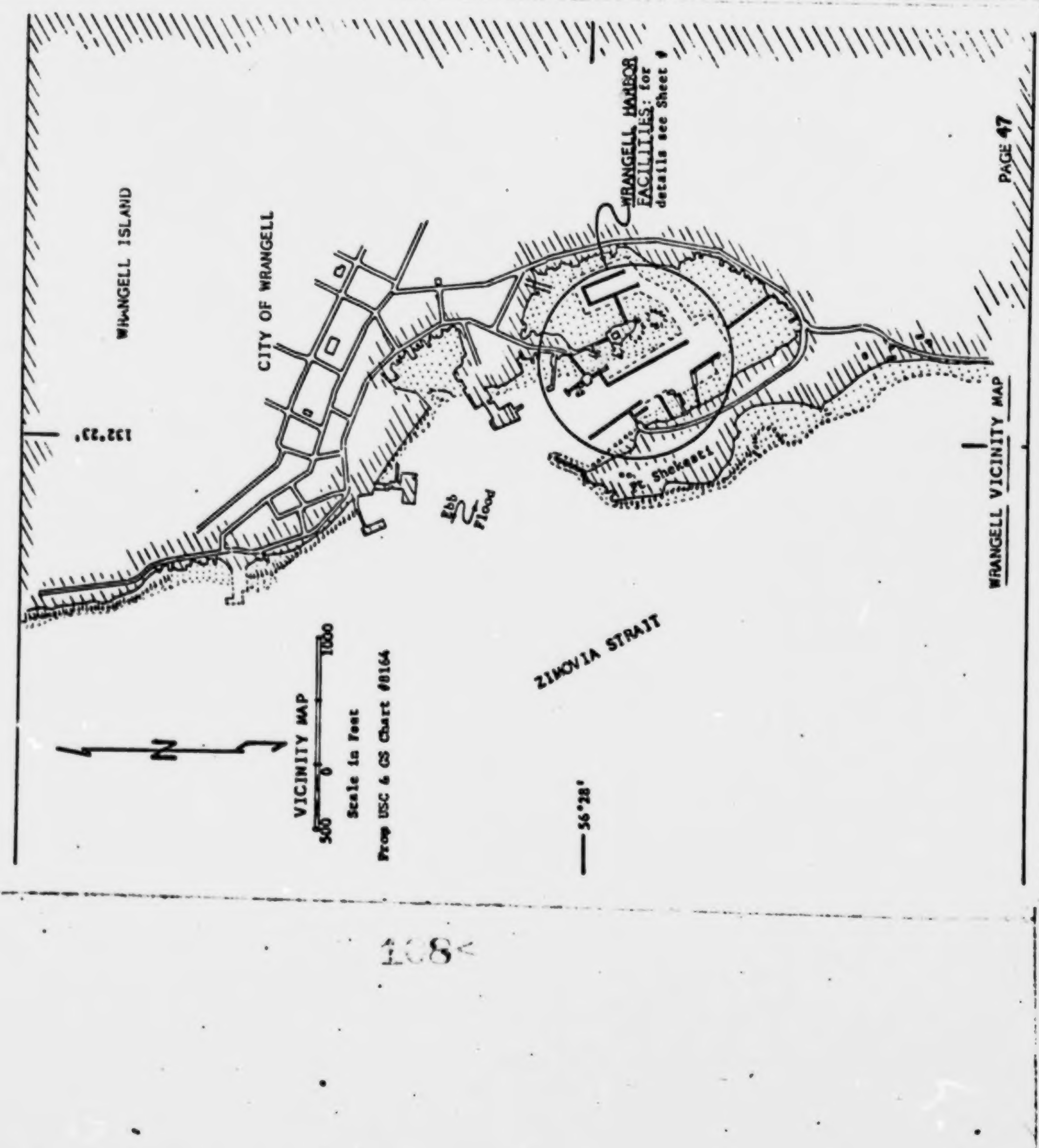

WRANGELL ISLAND
CITY OF WRANGELL
WRANGELL HARBOR FACILITIES: for details see Sheet #
132°23'
Ebb
Flood
Pt. Shekesti
ZIMOVIA STRAIT
N
VICINITY MAP
500 0 1000
Scale in Feet
From USC & GS Chart #8164
56°28'
PAGE 47
WRANGELL VICINITY MAP

EXHIBIT 7
Page 52

OPERATED BY THE CITY OF WRANGELL
HARBOR MASTER.. Yes, 8:00 a.m.-5:00 p.m. Mon.-Fri. on call bal.
DISTANCE FROM CITY CENTER......... ½ mile
BERTHING ACCOM. & FEES.. 20' & under $20.00, over 20' $1.00 per ft., per year.
TRANSIENT MOORAGE....... Yes, as shown
LIGHTING ON FLOAT .... Yes
POWER ON FLOAT... 120V flat rate to 500W, balance metered
POTABLE WATER ON FLOAT.. Yes
RESTROOM FACILITIES ON FLOAT .... Yes
GRID FACILITIES .... Yes
MARINE WAYS AVAILABLE... Yes, in harbor, vessels to 65'
REPAIR FACILITIES... Machine shop & garages adjacent to harbor
LODGING AVAILABLE... Yes, hotel in town
GROCERY &/OR RESTAURANT FACILITIES.... Both in town
FUEL AVAIL... Stnd. & Union - See harbor facilities map
COMMUNICATION FACILITIES.. Telephone at head of each float
REMARKS...... Seaplane float in harbor, limited boat launching facilities available at seaplane pullout 4 mi. south of town.

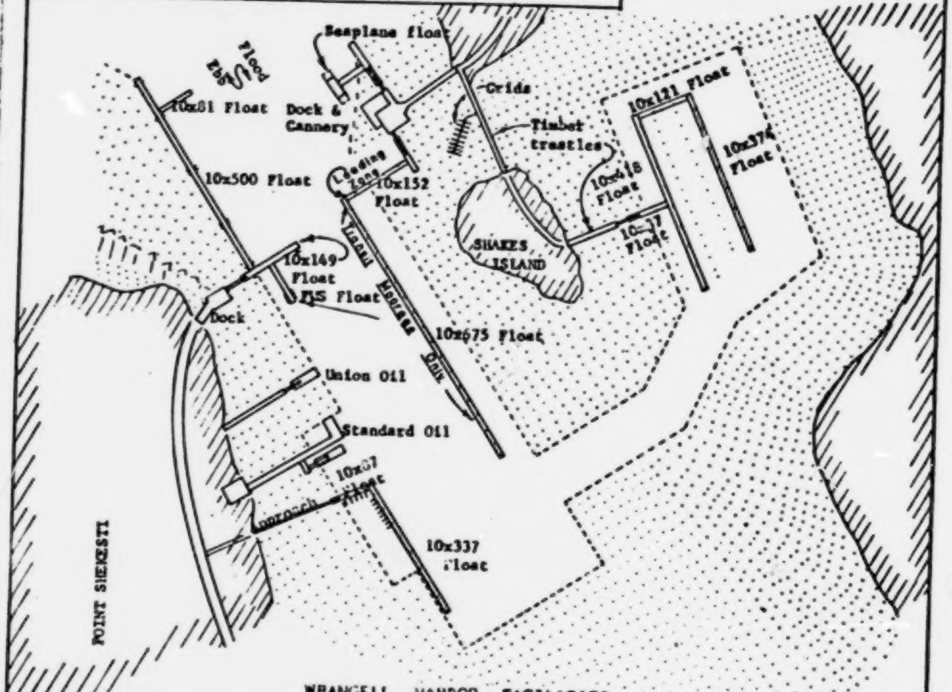
N
100
0
100
200
300

LOCATION MAP

Scale in Feet

Basin dredged to -10' feet MLLW

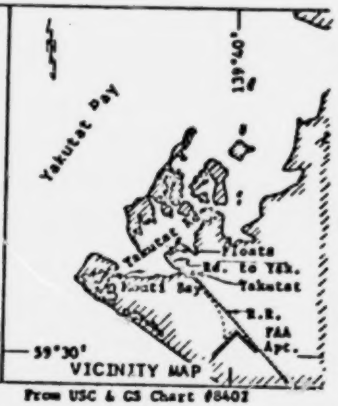
Vicinity Map shown on page 47


Seaplane float
Flood
Ebb
10x81 Float
Dock & Cannery
Grids
Timber trestles
10x121 Float
10x374 Float
10x500 Float
Loading Zone
10x152 Float
10x418 Float
SHAKES ISLAND
10x37 Float
10x149 Float
715 Float
Transient Moorage Only
Dock
10x675 Float
Union Oil
Standard Oil
10x87 Float
Approach
10x337 Float
POINT SHEKESTI

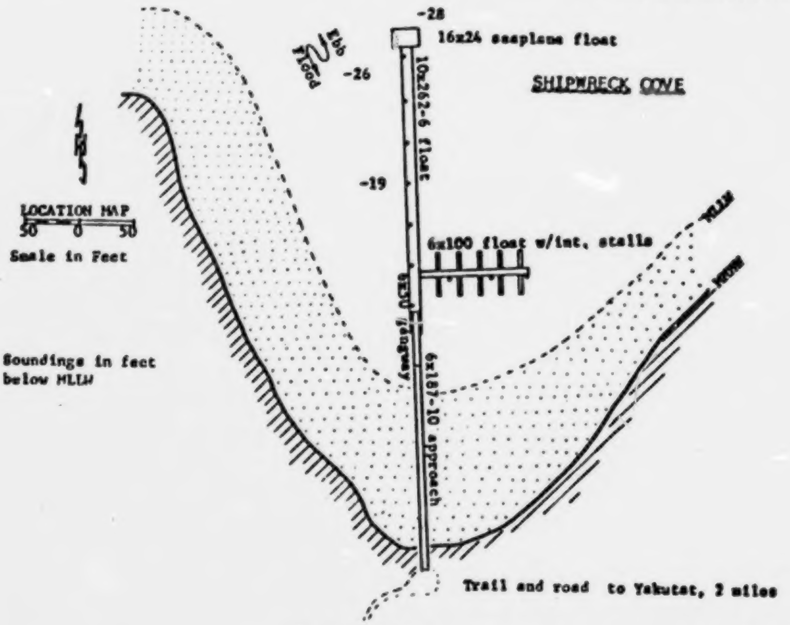
WRANGELL HARBOR FACILITIES

PAGE 48

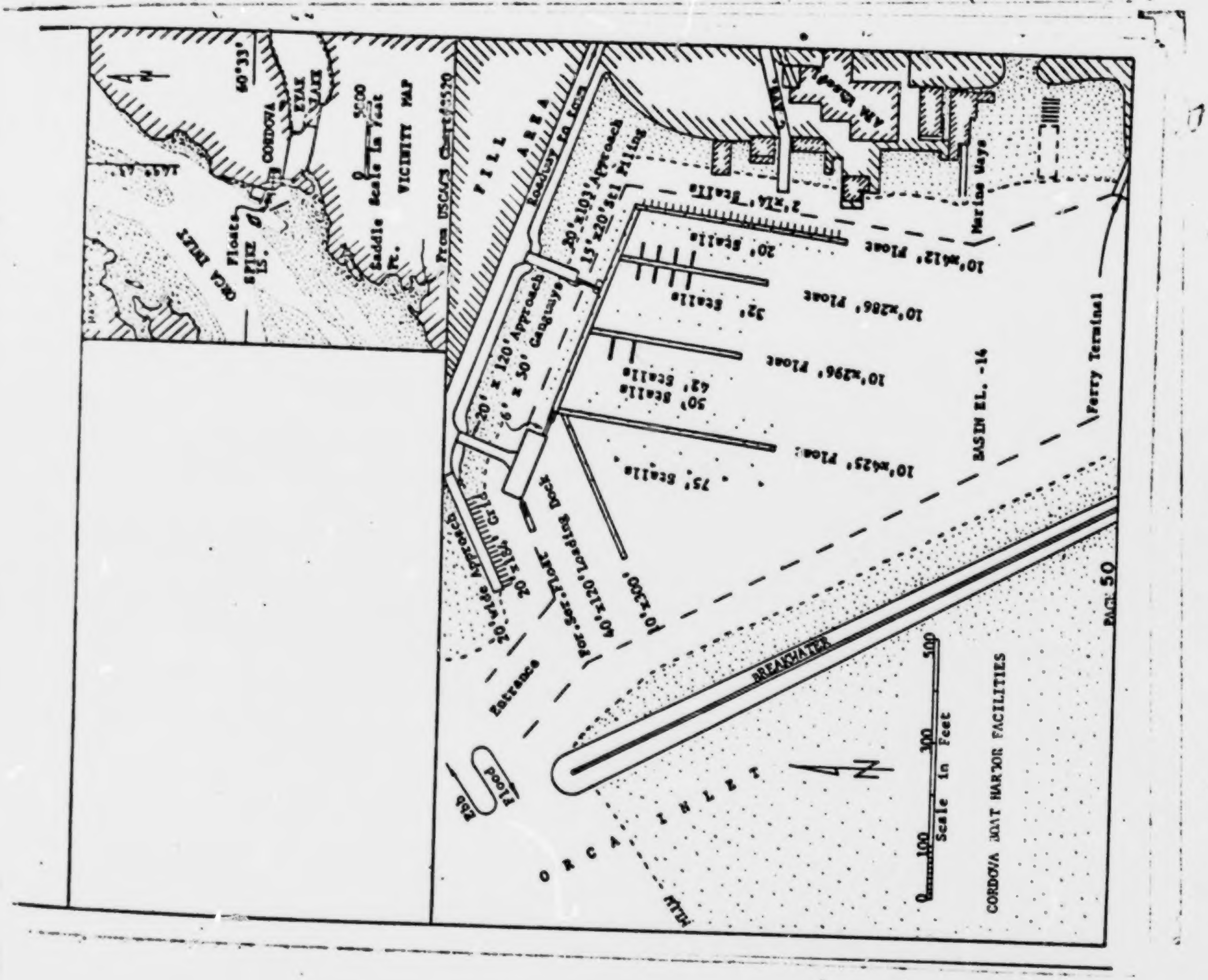
CONST. & MAINTAINED BY STATE OF ALASKA DIV. OF WATER & HARBORS
HARBOR MASTER .... No
DISTANCE FROM VILLAGE CENTER .... 2 miles by road
BERTHING ACCOM. & FEES .... open moorage
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
POTABLE WATER ON FLOAT.... No
RESTROOM FACILITIES ON FLOAT ...... No
GRID FACILITIES............ No
MARINE WAYS AVAILABLE .... No
REPAIR FACILITIES .... Limited, some repair available at Yakutat garage - also at cannery shop in season.
LODGING AVAILABLE.......... Yes, at Yakutat airport-9 miles
GROCERY &/OR RESTAURANT FACILITIES... Groceries in Yakutat, restaurant at airport
FUEL AVAILABLE .... Standard dock at Yakutat
COMMUNICATION ..... Direct telephone service in Yakutat
REMARKS...... Protected mooring, unregulated harbor


139°40'
Yakutat Bay
Yakutat
Monti Bay
Floats
Rd. to Yak.
Yakutat
R.R.
FAA
Apt.
59°30'

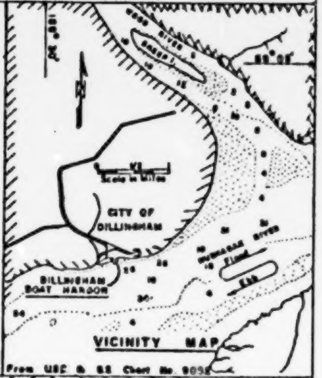
VICINITY MAP
From USC & GS Chart #8402


-28
16x24 seaplane float
Ebb
Flood
-26
SHIPWRECK COVE
10x262-6 float
-19
6x100 float w/int. stalls
6x30 gangway
6x187-10 approach
MLLW
MHHW
Trail and road to Yakutat, 2 miles
LOCATION MAP
50 0 50
Scale in Feet
Soundings in feet below MLLW

YAKUTAT FLOATS

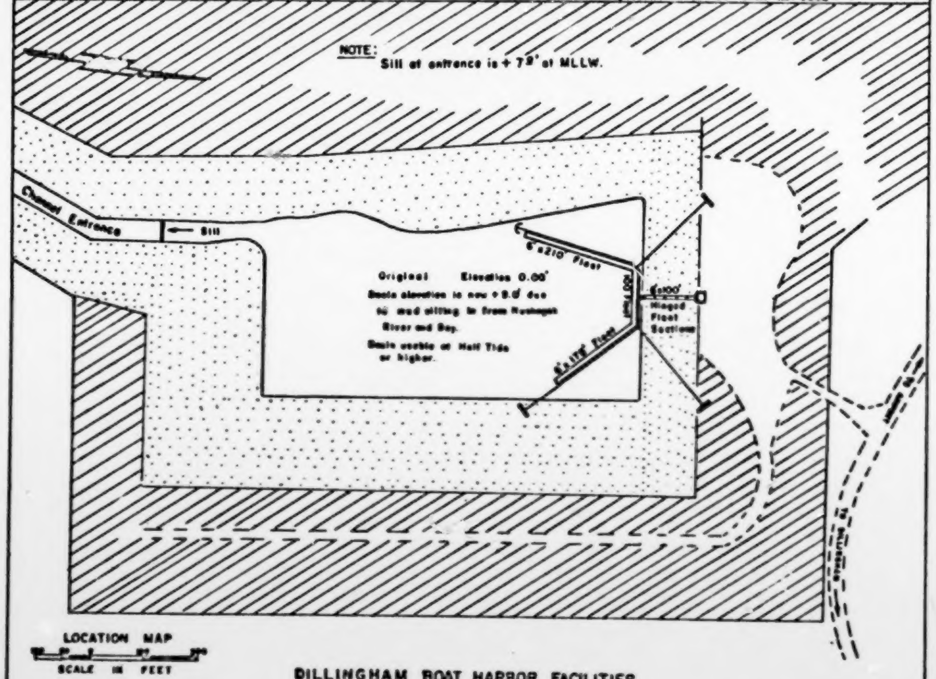

VICINITY MAP
From USC&GS Chart 8520
Scale in Feet
CORDOVA
EYAK LAKE
ORCA INLET
Floats
Spit
60°33'
FILL AREA
Roadway to Town
20'x103' Approach
15'x20' St'l Piling
20' x 120' Approach
6' x 50' Gangways
20' Stalls
10'x412' Float
32' Stalls
10'x286' Float
50' Stalls
42' Stalls
10'x296' Float
75' Stalls
10'x425' Float
10'x300'
40'x120' Loading Dock
For. Serv. Float
20' Wide Approach
Entrance
Ebb
Flood
Marine Ways
Ferry Terminal
BASIN EL. -14
BREAKWATER
ORCA INLET
0 100 300 500
Scale in Feet
CORDOVA BOAT HARBOR FACILITIES
PAGE 50

OPERATED BY CITY OF DILLINGHAM
HARBOR MASTER .... None
DISTANCE FROM CITY CENTER ..... 1½ miles
BERTHING ACCOMODATIONS & FEES.. Open moorage, no fees
LIGHTING ON FLOAT ... ... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .. No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE ... No
REPAIR FACILITIES .... Limited at cannery in season - garage in town
LODGING AVAILABLE........ Yes, in town
GROCERY &/OR RESTAURANT FACILITIES ... Both, in town
FUEL AVAILABLE .... Yes, all types - Stnd.oil town - dock
COMMUNICATIONS.... Fish & Game and Dept. of Highways radio-telephone - emergencies only
REMARKS...... This is a summer harbor only - floats are removed in the fall and reinstalled in the summer prior to fishing season.


158° 30'
59° 05'
Wood River
Scale in Miles
CITY OF DILLINGHAM
DILLINGHAM BOAT HARBOR
Nushagak River
Flood
Ebb

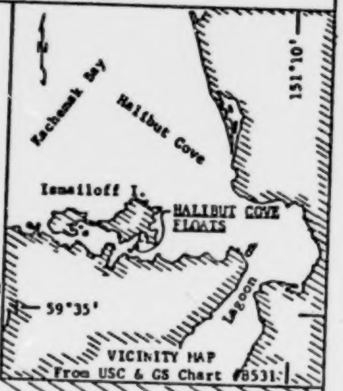
VICINITY MAP

From USC & GS Chart No. 9052

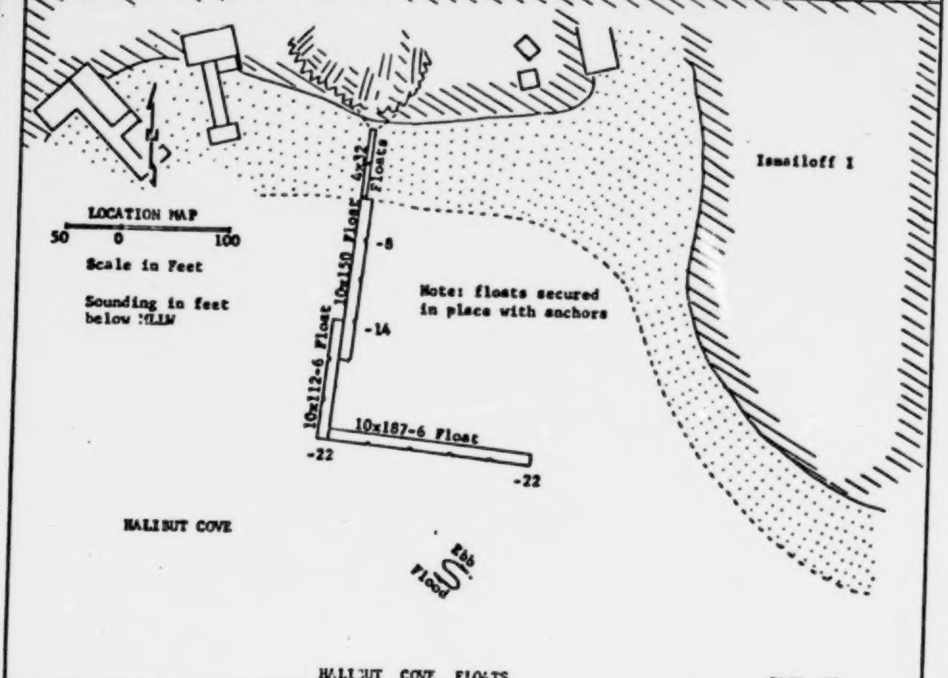

NOTE:
Sill at entrance is + 7.8' at MLLW.
Channel Entrance
Sill
6'x210' Float
6'x100' Float
6'x100'
Hinged Float Sections
6'x172' Float
Original Elevation 0.00'
Basin elevation is now + 8.0' due to mud silting in from Nushagak River and Bay.
Basin usable at Half Tide or higher.
To Dillingham
LOCATION MAP
SCALE IN FEET

DILLINGHAM BOAT HARBOR FACILITIES

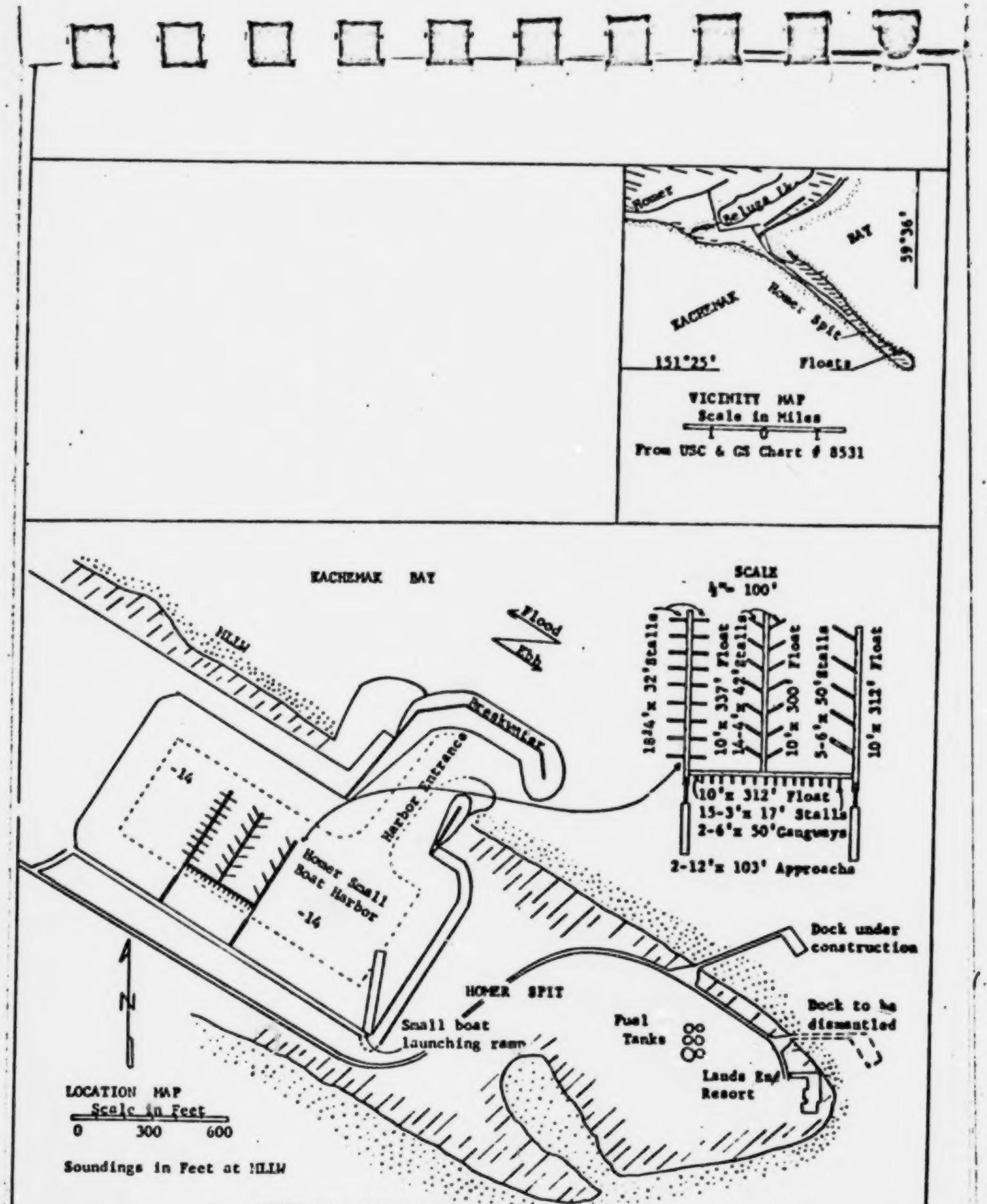
OPERATED BY COMMUNITY OF HALIBUT COVE	
HARBOR MASTER	No
DISTANCE FROM COMMUNITY CENTER	At community center
BERTHING ACCOMODATIONS & FEES.......	Open moorage, no fee
LIGHTING ON FLOAT	No
POWER ON FLOAT	No
WATER ON FLOAT	No
RESTROOM FACILITIES ON FLOAT	No
GRID FACILITIES	No
MARINE WAYS AVAILABLE...............	No
REPAIR FACILITIES	None
LODGING AVAILABLE	None
GROCERY &/OR RESTAURANT FACILITIES..	No
FUEL AVAILABLE......................	No
COMMUNICATION FACILITIES	No
REMARKS.......	Halibut Cove is a well protected harbor sheltered from adverse winter winds in Kachemak Bay.


N
Kachemak Bay
Halibut Cove
Ismailoff I.
HALIBUT COVE FLOATS
Lagoon
151°10'
59°35'

VICINITY MAP
From USC & GS Chart #8531


Ismailoff I
6x32 Floats
10x150 Float
10x112-6 Float
10x187-6 Float
-8
-14
-22
-22
Note: floats secured in place with anchors
HALIBUT COVE
Ebb
Flood
LOCATION MAP
50
0
100
Scale in Feet
Sounding in feet below MLLW

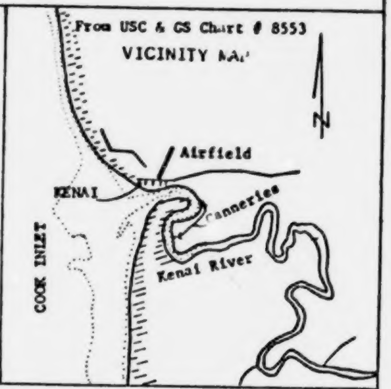
HALIBUT COVE FLOATS

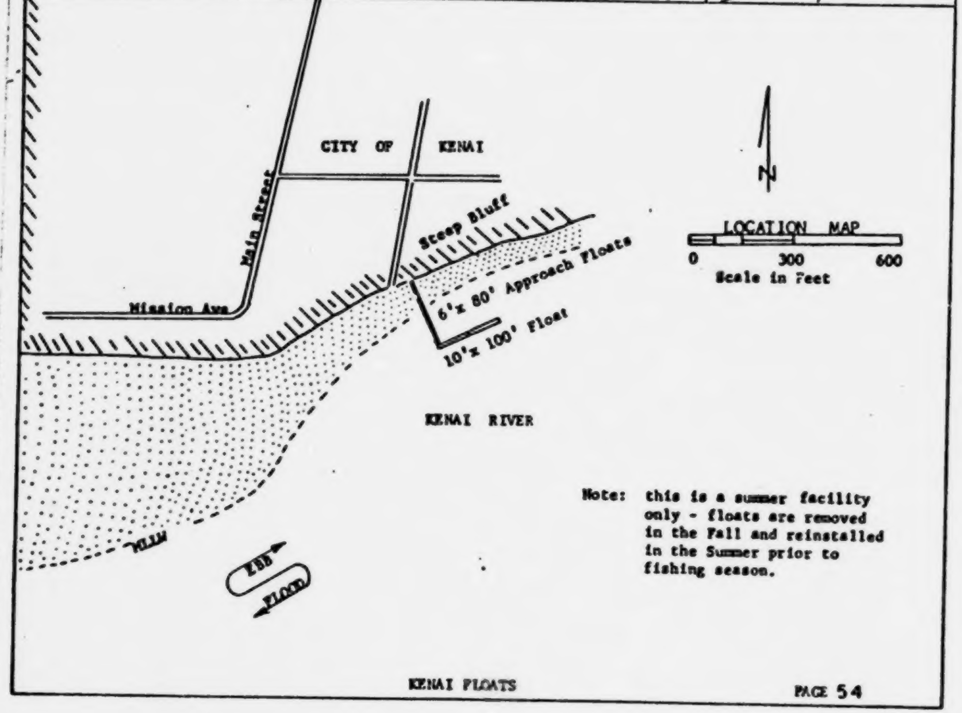

Homer
Beluga Lk
BAY
59°36'
KACHEMAK
Homer Spit
151°25'
Floats
VICINITY MAP
Scale in Miles
1 0 1
From USC & GS Chart # 8531
KACHEMAK BAY
MLLW
Flood
Ebb
SCALE
¼"= 100'
18-24'x 32'Stalls
10'x 337' Float
14-4'x 42'Stalls
10'x 300' Float
5-6'x 50'Stalls
10'x 312' Float
10'x 312' Float
15-3'x 17' Stalls
2-6'x 50'Gangways
2-12'x 103' Approachs
Breakwater
Harbor Entrance
-14
Homer Small
Boat Harbor
-14
Dock under
construction
HOMER SPIT
Small boat
launching ramp
Fuel
Tanks
Dock to be
dismantled
Lands End
Resort
N
LOCATION MAP
Scale in Feet
0 300 600
Soundings in Feet at MLLW

HOMER BOAT HARBOR FACILITIES

EXHIBIT 7
Page 58

OPERATED BY CITY OF KENAI
HARBOR MASTER .... No
DISTANCE FROM CITY CENTER.. 3 blocks
BERTHING ACCOMODATIONS & FEES....... Open moorage, no fees
LIGHTING ON FLOAT .... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT .... No
GRID FACILITIES ....
MARINE WAYS AVAILABLE...... No
REPAIR FACILITIES .... Garages, etc. in town
LODGING AVAILABLE .... Yes, hotel-motels
GROCERY &/OR RESTAURANT FACILITIES.... Yes, both in town
FUEL AVAILABLE .... Yes, at canneries in season
COMMUNICATION FACILITIES... Yes, direct telephone service in town
REMARKS...... This is primarily a loading and unloading facility providing convenient access to the Kenai business district.


From USC & GS Chart # 8553
VICINITY MAP
N
Airfield
KENAI
Canneries
Kenai River
COOK INLET

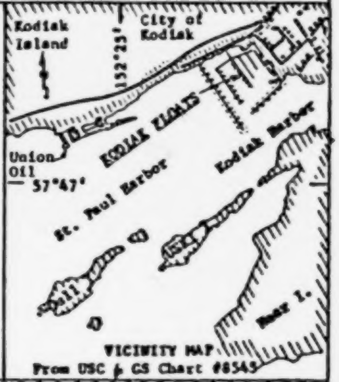

CITY OF KENAI
Main Street
Mission Ave
Steep Bluff
6'x 80' Approach Floats
10'x 100' Float
KENAI RIVER
MLLW
EBB
FLOOD
N
LOCATION MAP
0
300
600
Scale in Feet

Note: this is a summer facility only - floats are removed in the Fall and reinstalled in the Summer prior to fishing season.

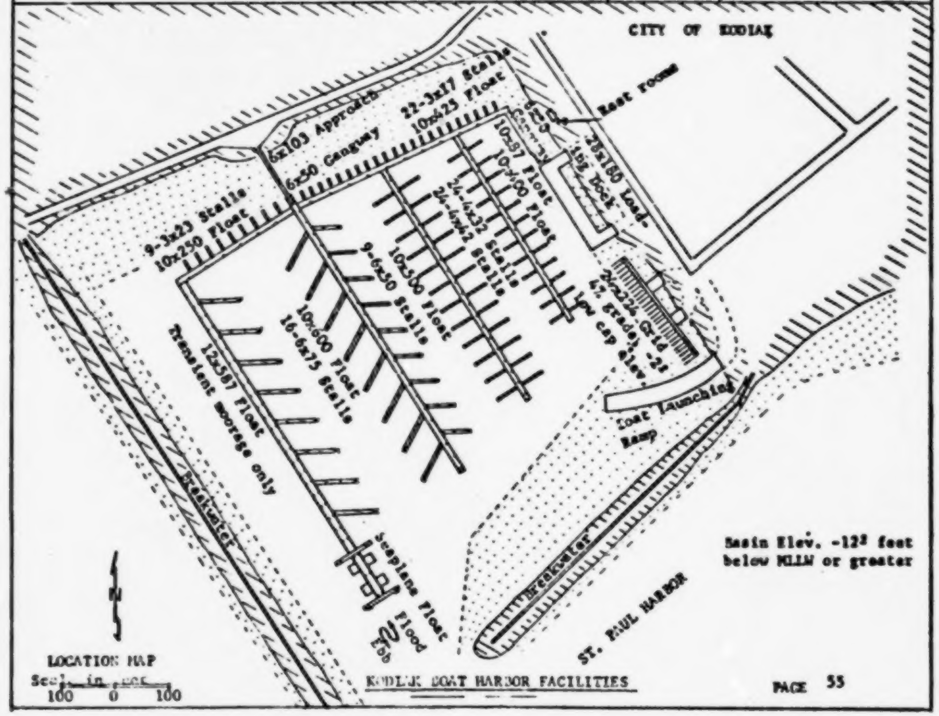
KENAI FLOATS

EXHIBIT 7
Page 59

OPERATED BY CITY OF KODIAK
HARBOR MASTER .... Yes, 8 A.M. - 5 P.M. (8 hrs.)
DISTANCE FROM CITY CENTER .... one block to city center
BERTHING ACCOMODATIONS & FEES.......
TRANSIENT MOORAGE ...... Yes, as shown - 6 hrs. free
LIGHTING ON FLOATS .... Yes
POWER ON FLOATS .... Yes
WATER ON FLOATS .... Yes
RESTROOM FACILITIES ... As shown
GRID FAC... Yes, 24x224, 4% graded beginning at -2° MLLW
MARINE WAYS AVAILABLE... Planned for 1966 - 600 tons
REPAIR FACILITIES........ Yes, garages, outboard repair etc. in town
LODING AVAILABLE .... Yes, hotel-motel in town
GROCERY &/OR RESTAURANT FACILITIES.... Yes, both in town
FUEL AVAILABLE .... Yes, see vicinity map
COMMUNICATION FACILITIES .... Yes, telephone on float
REMARKS....... Boat launching ramp as shown. Seaplane tie down floats as shown. Alaska southwest ferry system route.

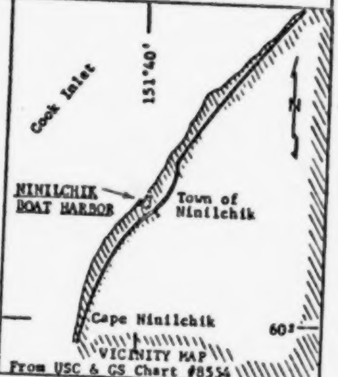

Kodiak Island
152°23'
City of Kodiak
KODIAK FLOATS
Kodiak Harbor
Union Oil
57°47'
St. Paul Harbor
Near I.

VICINITY MAP
From USC & GS Chart #8545

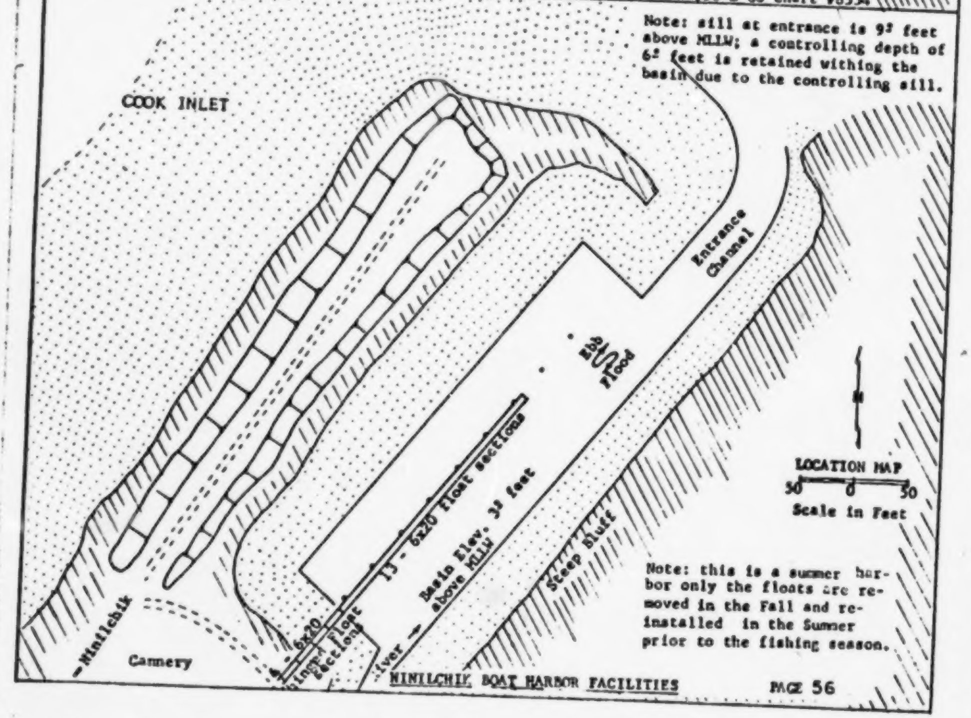

CITY OF KODIAK
Rest rooms
28x180 Loading Dock
6x103 Approach
6x50 Gangway
22-3x17 Stalls
10x425 Float
10x87 Float
10x400 Float
24-4x32 Stalls
24-4x42 Stalls
9-3x23 Stalls
10x250 Float
10x500 Float
9-6x50 Stalls
10x600 Float
16-6x75 Stalls
12x587 Float
Transient moorage only
24x224 Grid
4% graded -2±
low cap elev.
Boat launching Ramp
Seaplane Float
Flood
Ebb
Breakwater
Breakwater
ST. PAUL HARBOR
Basin Elev. -12± feet below MLLW or greater
N
LOCATION MAP
Scale in feet
100 0 100

KODIAK BOAT HARBOR FACILITIES

OPERATED BY TOWN OF NINILCHIK
HARBOR MASTER .... No
DISTANCE FROM TOWN CENTER....... ¼ mile
BERTHING ACCOMMODATIONS & FEES... Open moorage, no fee
LIGHTING ON FLOAT ...... No
POWER ON FLOAT .... No
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT ... No
GRID FACILITIES .... No
MARINE WAYS AVAILABLE... No
REPAIR FACILITIES ...... None
LODGING AVAILABLE ...... Cabins, motel, rooms
GROCERY &/OR RESTAURANT FACILITIES.. Both, in town & on highway
FUEL AVAILABLE... By arrangement with local dealer & bulk truck
COMMUNICATION FACILITIES .... Telephones in town
REMARKS.... A tidal basin limited to shallow draft vessels
with access available only during high tide stages.


Cook Inlet
151°40'
N
NINILCHIK
BOAT HARBOR
Town of
Ninilchik
Cape Ninilchik
60°

VICINITY MAP
From USC & GS Chart #8554


COOK INLET
Entrance
Channel
Ebb
Flood
13 - 6x20 float sections
Basin Elev. 3½ feet
above MLLW
Steep Bluff
6x20
hinged float
sections
River
Ninilchik
Cannery
N
30
0
30
Scale in Feet

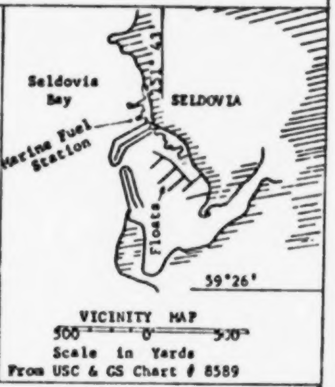
Note: sill at entrance is 9½ feet above MLLW; a controlling depth of 6½ feet is retained withing the basin due to the controlling sill.

LOCATION MAP

Note: this is a summer harbor only the floats are removed in the Fall and reinstalled in the Summer prior to the fishing season.

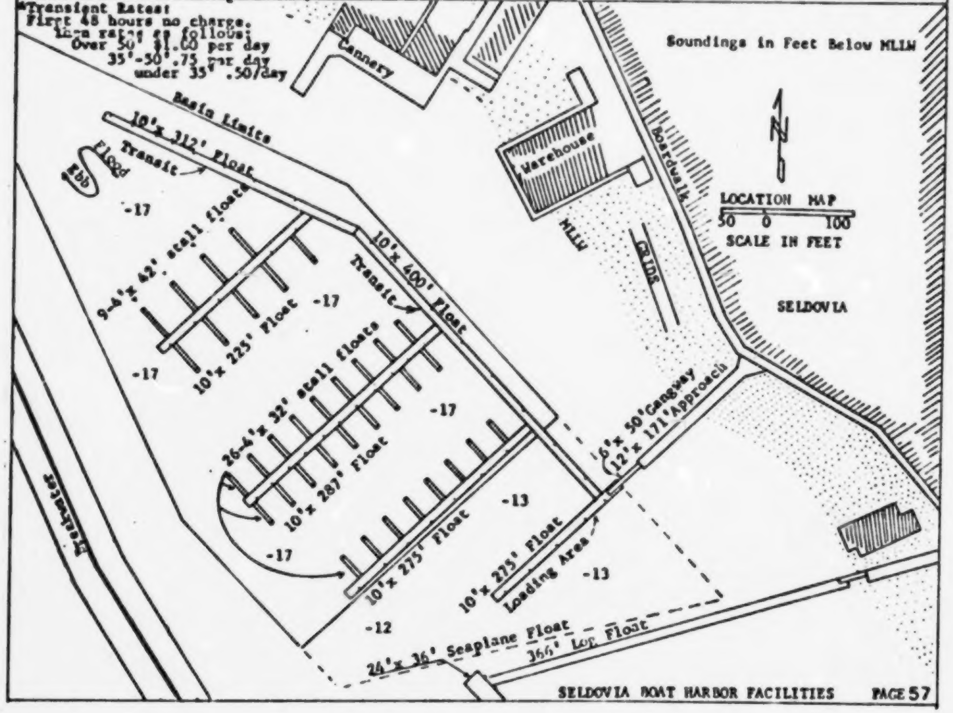
NINILCHIK BOAT HARBOR FACILITIES

OPERATED BY CITY OF SELDOVIA
HARBOR MASTER .... On call 24 hours
DISTANCE FROM CITY CENTER ..... At city center
BERTHING ACCO. & FEES... 50 ft. & over $125/yr. 40 ft. but under 50' $90/yr. 30 ft. but under 40' $60/yr. 20' but under 30' $40/yr. less than 20' $25/yr.
TRANSIENT MOORAGE ...... Yes, *indicated below
LIGHTING ON FLOAT ...... Planned
POWER ON FLOAT .... Planned
WATER ON FLOAT .... No
RESTROOM FACILITIES ON FLOAT ... None
GRID FACILITIES .... New grid to be constructed 1965
MARINE WAYS AVAILABLE... No
REPAIR FACILITIES ...... Limited repair-machine shops at canneries
LODGING FACILITIES ..... Yes, close by
GROCERY &/OR RESTAURANT FACILITIES.... Yes, both closeby
FUEL AVAILABLE .... Yes, see vicinity map
COMMUNICATION FACILITIES.. Yes, direct telephone service in town
REMARKS..................... Seaplane float as shown

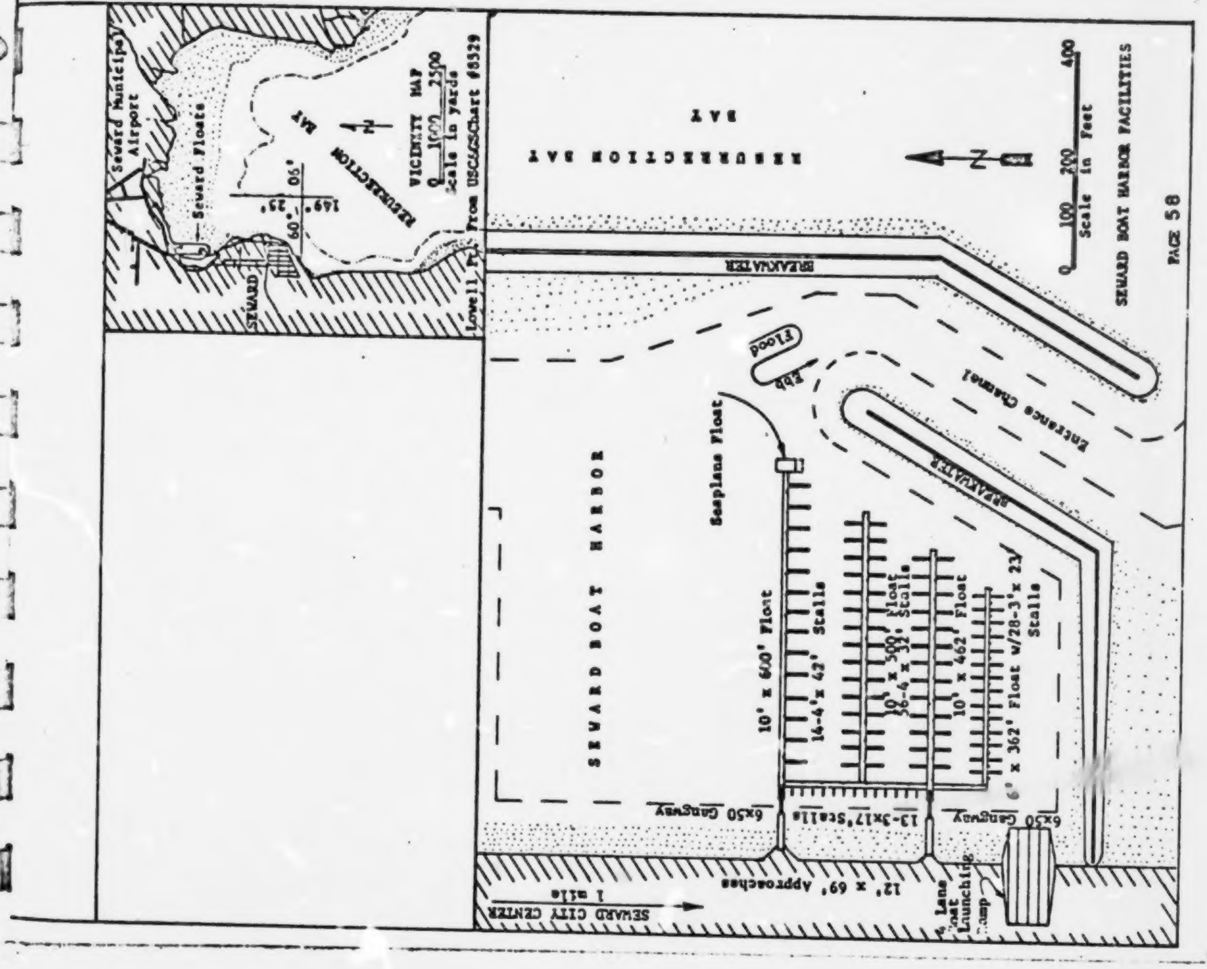

Seldovia Bay
SELDOVIA
Marine Fuel Station
Floats
59°26'
500 0 500

VICINITY MAP
Scale in Yards
From USC & GS Chart # 8589

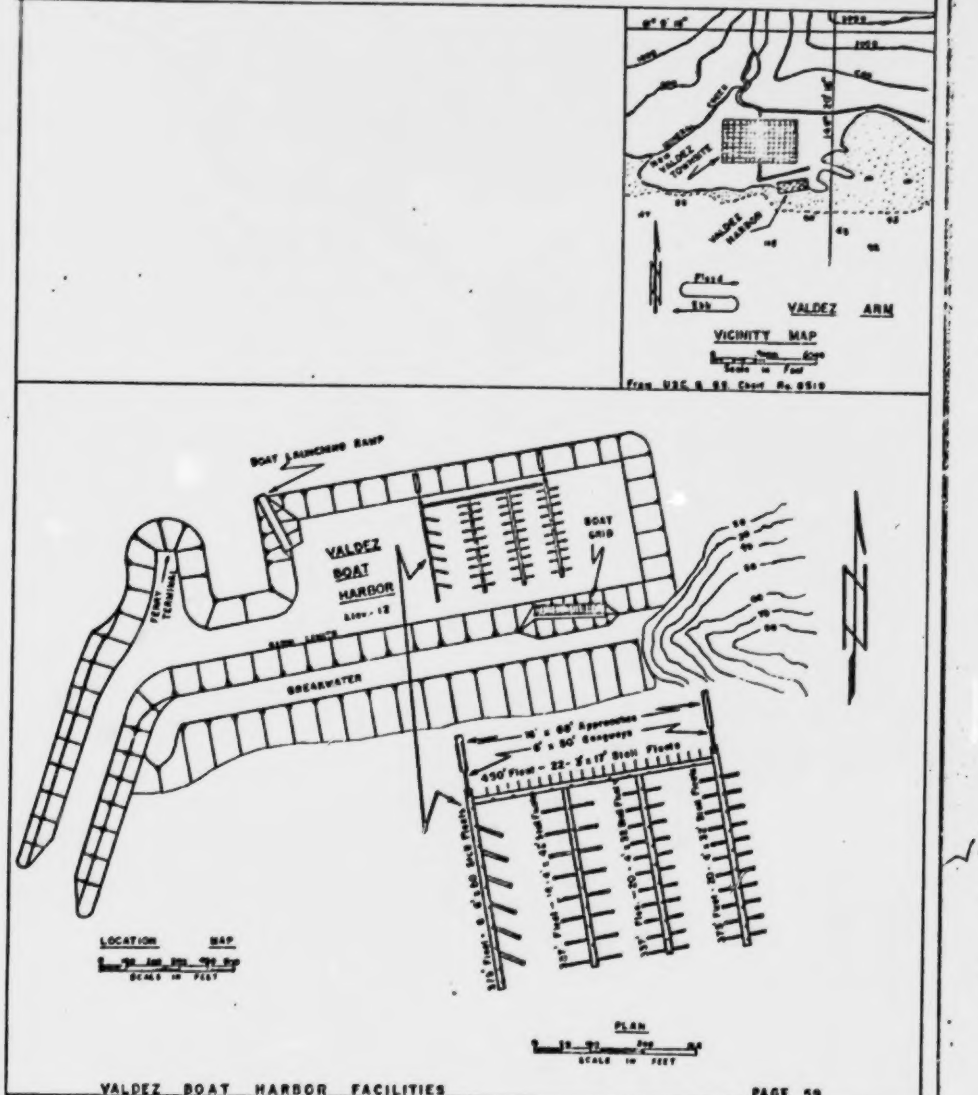
*Transient Rates:
First 48 hours no charge.
Then rates as follows:
Over 50' $1.00 per day
35'-50' .75 per day
under 35' .50/day


Soundings in Feet Below MLLW
Cannery
Basin Limits
10'x 312' Float
Transit
Flood
Ebb
-17
9-4'x 42' stall floats
10'x 225' Float
-17
-17
Warehouse
MLLW
GRIDS
Boardwalk
10'x 400' Float
Transit
26-4'x 32' stall floats
10'x 287' Float
-17
-17
10'x 275' Float
-13
6'x 50' Gangway
12'x 171' Approach
10'x 225' Float
Loading Area
-13
-12
24'x 36' Seaplane Float
366' Log Float
Breakwater
LOCATION MAP
50 0 100
SCALE IN FEET
SELDOVIA

SELDOVIA BOAT HARBOR FACILITIES


Seward Municipal Airport
Seward Floats
RESURRECTION BAY
N
VICINITY MAP
0 1000 2500
Scale in yards
60° 06'
149° 25'
SEWARD
Lowell Pt.
From USC&GS Chart #8529
RESURRECTION BAY
N
0 100 200 400
Scale in Feet
BREAKWATER
Flood
Ebb
Entrance Channel
BREAKWATER
Seaplane Float
SEWARD BOAT HARBOR
10' x 600' Float
14-4'x 42' Stalls
10' x 500' Float
56-4' x 32' Stalls
10' x 462' Float
6' x 362' Float w/28-3'x 23' Stalls
6x50 Gangway
13-3x17' Stalls
6x50 Gangway
12' x 69' Approaches
4 Lane Boat Launching Ramp
SEWARD CITY CENTER
1 mile
PAGE 58

SEWARD BOAT HARBOR FACILITIES

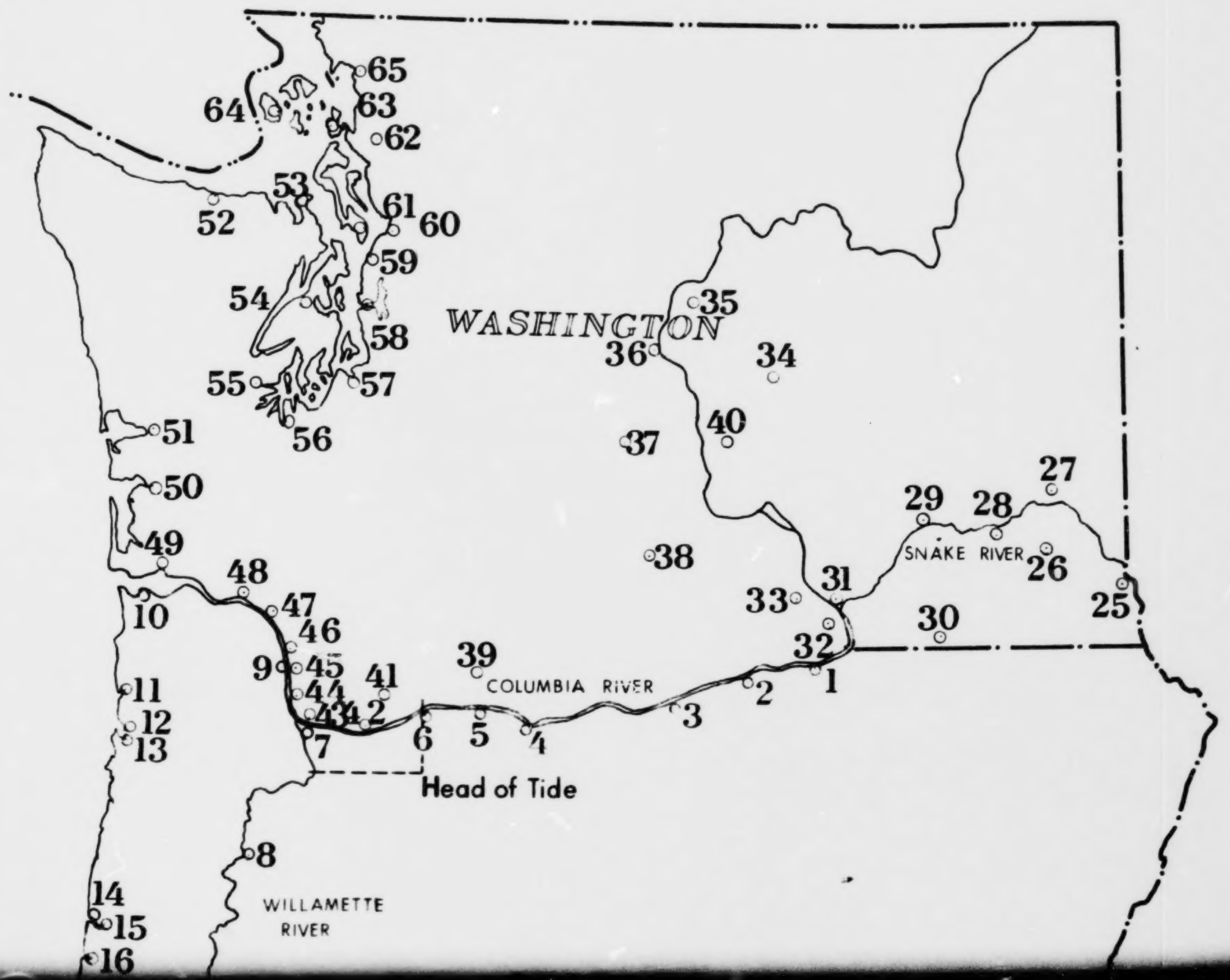

VALDEZ ARM
VICINITY MAP
Scale in Feet
From USC & GS Chart No. 8519
Flood
Ebb
VALDEZ HARBOR
VALDEZ TOWNSITE
VALDEZ BOAT HARBOR
Elev. -12
BOAT LAUNCHING RAMP
BOAT GRID
FERRY TERMINAL
BREAKWATER
10' x 88' Approaches
6' x 30' Gangways
430' Float – 22 – 3' x 17' Stall Floats
LOCATION MAP
SCALE IN FEET
PLAN
SCALE IN FEET

VALDEZ BOAT HARBOR FACILITIES

PAGE 59

EXHIBIT 8
Page 1

Port Directory States of Oregon and Washington


WASHINGTON
COLUMBIA RIVER
SNAKE RIVER
WILLAMETTE RIVER
Head of Tide
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
25
26
27
28
29
30
31
32
33
34
35
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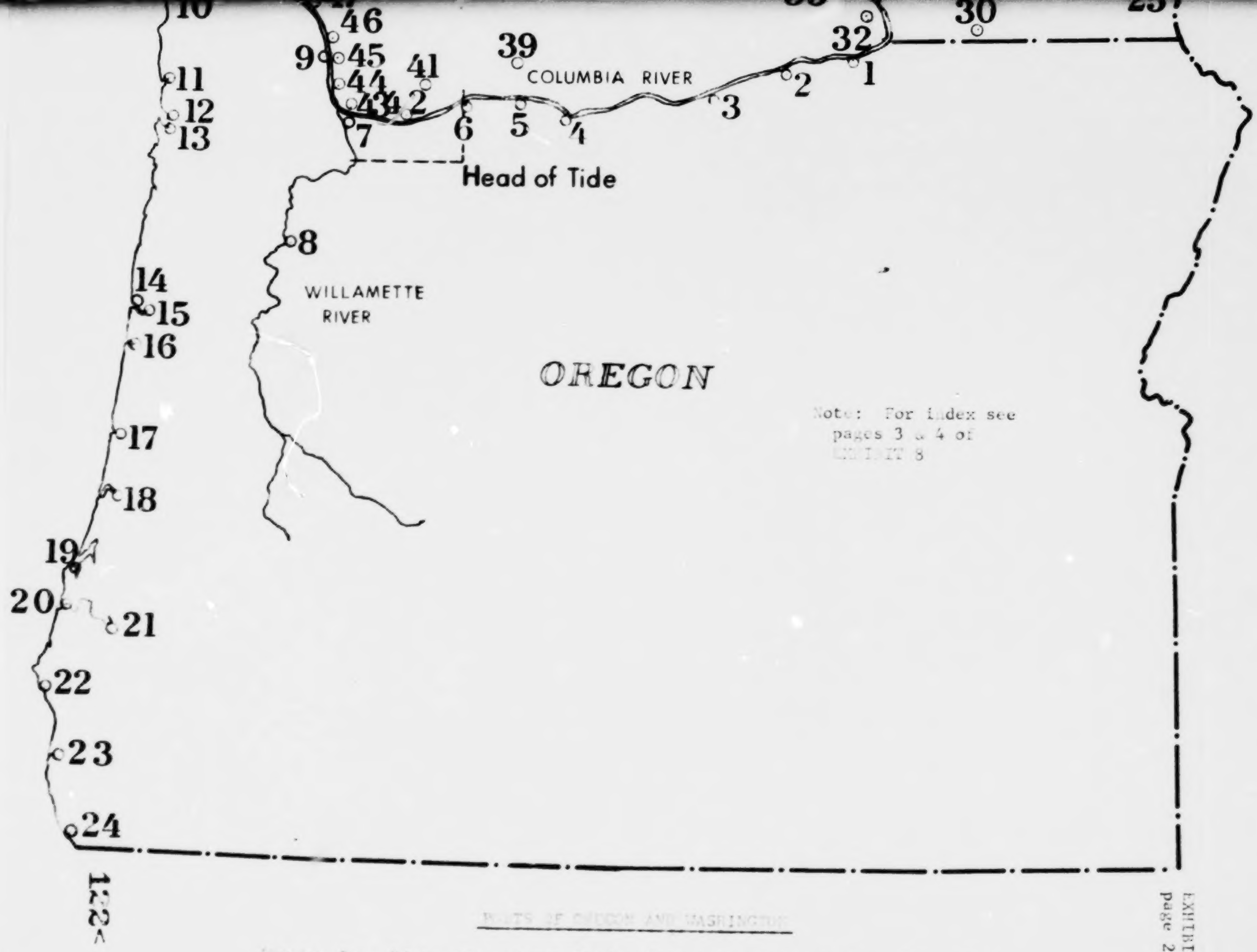
63
64
65

EXHIBIT 8
page 2


10
11
12
13
46
9
45
44
43
42
7
41
39
COLUMBIA RIVER
32
30
1
2
3
4
5
6
Head of Tide
8
WILLAMETTE RIVER
OREGON
14
15
16
17
18
19
20
21
22
23
24
122

Note: For index see pages 3 & 4 of EXHIBIT 8

PORTS OF OREGON AND WASHINGTON

(Oregon Port Directory, Oregon Public Port Authorities Assoc., Jan. 1968)
(1966 Port Directory, Washington Public Ports Assoc.)

EXHIBIT 8
Page 3

Port Directory States of Oregon and Washington
State of Oregon [72]

1. Port of Umatilla
McNary, Oregon

2. Port of Morrow County
Boardman, Oregon

3. Port of Arlington
Arlington, Oregon

4. Port of the Dalles
The Dalles, Oregon

5. Port of Hood River
Hood River, Oregon

6. Port of Cascade Locks
Cascade Locks, Oregon

7. The Port of Portland
Portland, Oregon

8. Marion-Salem-Polk Port Agency
Salem, Oregon

9. Port of St. Helens
St. Helens, Oregon

10. Port of Astoria
Astoria, Oregon

11. Port of Nehalem
Nehalem, Oregon

12. Port of Bay City
Garibaldi, Oregon

13. Port of Tillamook Bay
Tillamook, Oregon

14. Port of Newport
Newport, Oregon

15. Port of Toledo
Toledo, Oregon

16. Port of Alsea
Waldport, Oregon

17. Port of Siuslaw
Florence, Oregon

18. Port of Umpqua
Reedsport, Oregon

19. Port of Coos Bay
Coos Bay, Oregon

20. Port of Bandon
Bandon, Oregon

21. Port of Coquille
Myrtle Point, Oregon

22. Port of Port Orford
Port Orford, Oregon

23. Port of Gold Beach
Gold Beach, Oregon

24. Port of Brookings
Brookings, Oregon

EXHIBIT 8
Page 4

State of Washington[73]

25. Clarkston
26. Port of Garfield County
27. Port of Whitman County
28. Port of Columbia County
29. Kalotus
30. Walla Walla
31. Pasco
32. Kennewick
33. Port of Benton County
34. Port of Grant County
35. Port of Douglas County
36. Port of Chelan County
37. Kittitas
38. Sunnyside
39. Port of Klickitat County
40. Quincy
41. Port of Skamania County
42. Camas-Washougal
43. Vancouver
44. Ridgefield
45. Woodland
46. Kalama
47. Longview
48. Wahkiakum
49. Pacific
50. Willapa Harbor
51. Grays Harbor
52. Port Angeles
53. Port Townsend
54. Port of Kitsap County
55. Port of Mason County
56. Olympia
57. Tacoma
58. Seattle
59. Edmonds
60. Everett
61. Island County
62. Port of Skagit County
63. Anacortes
64. Port of San Juan County
65. Bellingham

EXHIBIT 9
Page 1

Traffic Through Bonneville, Dalles, and Willamette Falls Locks [74]
1930-1965
(Short tons)

Year	Through Bonneville Lock	Through The Dalles Lock	Through and Into Willamette Falls Locks
1930	79,747	None	251,985
1931	105,717	987	220,052
1932	59,777	408	319,355
1933	85,815	15,640	271,209
1934	87,029	23,408	349,116
1935	67,527	3,631	350,645
1936	59,490	7,295	403,851
1937	[a] 15,228	5,626	565,369
1938	161,920	44,349	339,498
1939	416,814	139,542	894,108
1940	707,444	325,900	1,254,091
1941	923,606	392,863	1,910,325
1942	692,021	324,013	1,945,642
1943	681,665	433,145	2,246,211
1944	791,919	559,339	2,027,801
1945	802,901	598,980	1,619,121
1946	1,018,679	744,352	2,077,599
1947	1,150,581	804,572	1,995,704
1948	1,139,997	699,077	1,977,226
1949	1,340,336	900,246	1,806,477
1950	1,143,901	834,303	1,664,416
1951	1,357,852	1,022,997	1,853,645
1952	1,521,616	1,023,395	1,767,508
1953	1,343,575	785,445	1,714,246
1954	1,372,725	791,192	1,597,448
1955	1,578,865	1,061,691	1,430,903
1956	1,518,924	1,139,563	1,794,855
1957	1,481,590	1,148,043	1,178,090
1958	1,702,752	1,313,579	957,694
1959	2,043,494	1,504,119	1,087,865
1960	2,316,362	1,857,849	1,091,982
1961	1,962,065	1,512,502	1,103,479
1962	1,940,273	1,476,393	1,246,594
1963	2,215,955	1,656,358	1,184,250
1964	1,800,815	1,477,630	1,090,520
1965	[b] 2,346,670	1,953,947	1,017,531

[a] Commerce shown above for Bonneville prior to 1938 represents traffic at Cascades Canal, about 3.5 miles upstream, which was inundated by pool formed by Bonneville Dam in February 1938.

[b] Statistics for 1965 are preliminary and subject to revision until published in "Waterborne Commerce of the United States, Part 4".

EXHIBIT 10
Page 1

Commercial Shipping for Washington Ports[43]
1964

Ports	Total Tonage	% Total For State
Willapa River - Harbor	594,075	1.4
Grays Harbor - Chehalis River	2,094,123	4.9
Hoquiam River	634,678	1.5
Neah Bay	191,749	.5
Puget Sound Area		
Port Angeles	2,484,171	5.8
Port Townsend	897,125	2.1
Waterway Port Townsend to Oak Bay	760,312	1.8
Port Gamble	249,380	.6
Hammersley Inlet	843,496	2.0
Olympia	879,910	2.1
Tacoma	6,052,398	14.1
Seattle	13,798,836	32.2
Lake Washington Ship Canal	2,143,740	5.0
Everett	1,913,382	4.5
Swinomish Slough	357,114	.8
Anacortes	7,294,214	17.0
Bellingham Bay	1,681,093	3.9
Total for Puget Sound	39,355,171	91.7
Total for Washington	42,869,796	

EXHIBIT 11
Page 1

Commodities Shipped In and Out of Portland
and Seattle Harbors - 1964

Portland Harbor - 1964[43]

	SHIPMENT INTO PORTLAND		SHIPMENT OUT OF PORTLAND		TOTAL SHIPMENTS 15,211,980 SHORT TONS
	Foreign 876,781 Short tons	Domestic 9,554,296 Short tons	Foreign 3,186,720 Short tons	Domestic 1,594,183 Short tons	
Animal and Animal Products	1.2 %	.01 %	1.2 %	.07 %	.3 %
Vegetable Food Products and Beverages	2.8 %	5.2 %	74.8 %	2.6 %	19.4 %
Vegetable Products, Inedible, Except Fibers and Wood	.3 %	.3 %	1.2 %	.9 %	.5 %
Textile Fibers and Manufactures	2.1 %	.01%	.02%	.01%	.2 %
Wood and Paper	4.4 %	15.8 %	13.6 %	20.2 %	15.2 %
Non-metallic Minerals Including Petroleum Products	26.0 %	75.8 %	1.4 %	70.6 %	56.7 %
Metals and Manufactures, Except Machinery & Vehicles	57.8 %	.2 %	7.1 %	.3 %	5.0 %
Machinery and Vehicles	2.8 %	2.1 %	.3 %	.3 %	1.6 %
Chemicals and Allied Products	2.3 %	.3 %	.1 %	4.8 %	.9 %
Miscellaneous	.2 %	.08%	.2 %	.1 %	.1 %

EXHIBIT 11
Page 2

Seattle Harbor - 1964 [43]

COMMODITY	SHIPMENT INTO SEATTLE		SHIPMENT OUT OF SEATTLE		TOTAL SHIPMENTS 13,798,836 SHORT TONS
	Foreign 1,086,540 Short Tons	Domestic 9,177,770 Short Tons	Foreign 1,049,930 Short Tons	Domestic 2,484,596 Short Tons	
Animal and Animal Products	1.7 %	1.3 %	6.8 %	.8 %	1.7 %
Vegetable Food Products and Beverages	7.8 %	.2 %	67.7 %	7.1 %	7.2 %
Vegetable Products, Inedible Except Fibers and Wood	.2 %	1.1 %	.5 %	.6 %	.9 %
Textile Fibers and Manufactures	1.1 %	.001%	.1 %	.02%	.1 %
Wood and Paper	27.1 %	7.3 %	13.4 %	27.0 %	12.9 %
Non-metallic Minerals Including Petroleum Products	49.6 %	87.0 %	.7 %	49.6 %	70.7 %
Metals and Manufactures, Except Machinery and Vehicles	8.2 %	.8 %	6.4 %	2.0 %	2.0 %
Machinery and Vehicles	1.2 %	.5 %	.9 %	2.6 %	.9 %
Chemical and Allied Products	2.7 %	.6 %	.3 %	.8 %	.8 %
Miscellaneous	.4 %	1.3 %	3.3 %	9.4 %	2.8 %

EXHIBIT 12
Page 1

COMMERCIAL WATER TRAFFIC [43]
Columbia & Snake Rivers
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Columbia River Entrance		52	(1) 705	(2) 1,396	(1) 183	(2) 80	2,364
Columbia and Lower Willamette Rivers below Vancouver, Wash. and Portland, Ore.	Rafted logs, wheat, gasoline	27	(1) 19,776	(2) 1,993	(1) 7,965	(2) 96	29,830
Columbia River between Vancouver, Wash., and The Dalles, Oregon	Rafted logs, wheat, paper, & manufactures		4,771	12	4,739	1	9,523
Columbia River @ Bonneville, Oregon	Wheat, rafted logs, gas oil and distillate fuel oil		1,107		1,571	1	2,679
Columbia River above The Dalles Dam, Wash. and Ore. to McNary Lock and Dam, Ore. and Wash.	Sand-gravel-crushed rock, wheat, gas oil and distillate fuel oil		2,263		2,370		4,633
The Dalles Dam, Columbia River, Wash. & Ore.	Wheat, gas oil & distillate fuel, gasoline		728		1,395	1	2,124

(1) under 19' draft
(2) 19' draft and over

COMMERCIAL WATER TRAFFIC
Columbia & Snake Rivers (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
John Day Lock & Dam, Columbia River, Wash. & Ore.	Wheat, gas oil & distillate fuel oil, gasoline		769		1,307		2,076
Columbia River & tributaries above McNary Lock & Dam to Kennewick, Wash.	Wheat, gas oil & distillate fuel oil, gasoline		1,484		1,252		2,736
McNary Lock & Dam, Columbia River, Ore. & Wash.	Wheat, gas oil & distillate fuel oil		669		1,112		1,781
Columbia River between Wenatchee & Kettle Falls, Wash.	Rafted logs		1,465		2		1,467
Ports other than Portland, Astoria, St. Helens, Longview and Kalama							
Knappton, Wash., Bradwood, Wauna, Beaver, Ranier, and Prescott, Ore.	Rafted logs, pulpwood, lumber & shingles	<1	(1) 4,136	(2) 11	(1) 640	(2) 6	4,793

(1) under 19' draft
(2) 19' draft and over

EXHIBIT 12

COMMERCIAL WATER TRAFFIC
Columbia & Snake Rivers (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic: Self-Propelled: Under 15' Draft	Number of Trips Inbound Traffic: Self-Propelled: 15' Draft & Over	Number of Trips Inbound Traffic: Non Self-Propelled: Under 15' Draft	Number of Trips Inbound Traffic: Non Self-Propelled: 15' Draft & Over	Total Trips
Snake River Ore., Wash., & Idaho	Wheat, gas oil & distillate fuel oil, gasoline		640		586		1,226
Ice Harbor Lock & Dam, Snake River	Wheat, barley & rye, construction, mining machinery & parts		81		98		179

COMMERCIAL WATER TRAFFIC
Columbia & Snake Rivers
1964

Port or River Stretch	Major Commodities	Total Trips	Passengers
Bakers Bay, Wash.	Sand-gravel-crushed rock, gasoline, fish & products-fresh	133	
Columbia Slough, Ore.		8	

COMMERCIAL WATER TRAFFIC
OREGON 43
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Skipanon Channel	Rafted logs, pulpwood, fish and products-fresh		264		90		354
Youngs Bay & Youngs River	Rafted logs, sand-gravel & crushed rock, gasoline		808		1		809
Westport Slough	Rafted logs, lumber and shingles, pulpwood	2	301	26	103	1	431
Clatskanie River	Rafted logs, fish & products fresh			126			126
Port of Astoria	Logs, rafted logs, lumber & shingles	42	(1) 2,047	(2) 124	(1) 246	(2) 4	2,421
Port of St. Helens	Rafted logs, wood-nonmanufactured, lumber and shingles		952	15	633	6	1,606
Multnomah Channel	Rafted logs, paper and manufactures, wood-nonmanufactured		4,449	1,286		1	5,736

(1) under 19' draft
(2) 19' draft and over

EXHIBIT 13
Page 2

COMMERCIAL WATER TRAFFIC
Oregon (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Oregon Slough (North Portland Harbor)	Rafted logs, sand-gravel-crushed rock, fish and products-fresh		840		71		911
Port of Portland	Gasoline, wheat sand-gravel-crushed rock	26	(1) 13,569	(2) 1,173	(1) 10,382	(2) 36	25,160
Willamette River above Portland & Yamhill River	Sand-gravel-crushed rock, rafted logs, crushed limestone	7	11,359		7,806		19,165
Willamette River at Willamette Falls	Rafted logs, paper and manufactures, pulpwood		1,082		1,101		2,183
Chetco River	Lumber and shingles, pulpwood, fish and products-fresh		26		24		50
Rogue River	Lumber and shingles, commodities, shellfish & products		1,043		62		1,105
Coquille River	Rafted logs, lumber and shingles		1,642		39	1	1,682

(1) under 19' draft
(2) 19' draft and over

EXHIBIT 13
Page 3

COMMERCIAL WATER TRAFFIC
Oregon (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Coos Bay	Rafted logs, lumber and shingles, logs	13	7,998	341	223	45	8,607
Coos and Millicoma rivers	Rafted logs		2,897				2,897
Umpgua River	Sand-gravel-crushed rock, rafted logs, lumber and shingles		1,463	5	603	2	2,073
Smith River	Rafted logs, sand-gravel-crushed rock		387		133		520
Siuslaw River	Lumber and shingles, rafted logs, construction-mining machinery and parts		396		42		438
Yaguina River	Rafted logs, lumber and shingles, pulpwood		697		326	1	1,024
Yaguina Bay and Harbor	Lumber and shingles, pulpwood, residual fuel oil	4	1,127	51	580	4	1,762
Tillamook Bay & Bar	Rafted logs, shellfish and products, fish and products-fresh		81				81

COMMERCIAL WATER TRAFFIC
Oregon
1964

Port or River Stretch	Major Commodities	Total Trips	Passengers
Depoe Bay	Fish and products-fresh		29,800
Port Orford	Lumber & shingles, fish & products-fresh, shellfish & products	34	

EXHIBIT 14
Page 1

COMMERCIAL WATER TRAFFIC
Washington
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Deep River	Rafted logs, sand-gravel-crushed rock		444		4		448
Elokomin Slough	Rafted logs		612				612
Port of Longview	Rafted logs, wheat, aluminum ores-concentrates-scrap	36	6,273	734	861	28	7,896
Cowlitz River	Sand-gravel-crushed rock, rafted logs, fish and products-fresh		174		241		415
Port of Kalama	Wheat, rafted logs, barley & rye	55	(1) 483	(2) 35	(1) 171		689
Lewis River	Rafted logs, sand-gravel-crushed rock		236		65		301
Port of Vancouver	Wheat, rafted logs, sand-gravel-crushed rock	45	3,099	108	634	2	3,843
Willapa River & Harbor, & Naselle River	Rafted logs, logs, lumber & shingles	18	5,568	80	4		5,652

(1) under 19' draft
(2) 19' draft and over

EXHIBIT 14
Page 2

COMMERCIAL WATER TRAFFIC
Washington (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic: Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Grays Harbor & Chehalis River	Rafted logs, logs, sand-gravel-crushed rock	22	10,090	253	462	9	10,814
Hoquiam River	Rafted logs, sand-gravel-crushed rock, waste materials		3,891	28			3,919
Neah Bay	Rafted logs, logs, gas oil and distillate fuel oil	28	6,926	35	6	3	6,970
Port Angeles	Rafted logs, kerosene, logs	13	(1) 1,607	(2) 107	(1) 515		2,229
Port Townsend	Pulpwood, wood-non-manufactured, sand-gravel-crushed rock	17	(1) 4,704	(2) 6	(1) 1,840		6,550
Waterway Connecting Port Townsend Bay & Oak Bay	Pulpwood, wood-nonmanufactured, rafted logs		1,203	3	1,177		2,383
Port Gamble Harbor	Rafted logs, wood-nonmanufactured, lumber & shingles	<1	(3) 394	(4) 10	(3) 226		630

(1) under 23' draft
(2) 23' draft and over
(3) under 19' draft
(4) 19' draft and over

COMMERCIAL WATER TRAFFIC
Washington (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Hammersley Inlet	Rafted logs, pulpwood, lumber and shingles	<1	596		493		1,089
Olympia Harbor	Rafted logs, lumber and shingles, sand-gravel-crushed rock	7	(1) 6,420	(2) 32	(1) 555	1	7,008
Tacoma Harbor	Rafted logs, gasoline, logs	41	24,614	672	2,241	116	27,643
Seattle Harbor	Gasoline, gas oil and distillate fuel oil, sand-gravel-crushed rock	15	(1) 45,486	(2) 1,247	(1) 7,690	(2) 63	54,486
Lake Washington Ship Canal	Sand-gravel-crushed rock, rafted logs, gas oil and distillate fuel oil	4	(3) 3,483		(3) 2,030	(4) 1	5,514
Everett Harbor	Rafted logs, fish & products-canned, metal manufactures and parts	25	(1) 17,012	(2) 98	(1) 835		17,945

(1) under 19' draft
(2) 19' draft and over
(3) under 23' draft
(4) 25' draft

EXHIBIT 14
Page 4

COMMERCIAL WATER TRAFFIC
Washington (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Swinomish Slough	Rafted logs, fish & products-canned, metal manufactures and parts		4,346	1	143		4,490
Anacortes Harbor	Gasoline, gas oil and distillate fuel oil, residual fuel oil	7	(1) 6,845	(2) 221	(1) 323	(2) 11	7,400
Bellingham Bay & Harbor	Pulpwood, rafted logs, building cement	47	(1) 8,079	(2) 116	(1) 940	(2) 8	9,143

(1) under 19' draft
(2) 19' draft and over

COMMERCIAL WATER TRAFFIC
Washington
1964

Port or River Stretch	Major Commodities	Total Trips	Passengers
Chinook Channel	Fish & products-fresh, shellfish & products		
Grays River	Rafted logs	14	
Skamokawa Creek	Rafted logs	46	
Skamokawa (Steamboat) Slough	Rafted logs	182	
Lake River	Rafted logs, vegetables & preparations, commodities	1,452	3,980
Quillayute River	Fish & products-fresh, construction-mining machinery & parts	19,140	
Stillaguamish River	Rafted logs	46	
Blaine Harbor	Fish & products-canned shellfish & products	11,599	1
Skagit River	Rafted logs	149	
Chehalis River above Montesano, Grays Harbor	Rafted logs	225	
Snohomish River	Rafted logs, wood-nonmanufactured, sodium hydroxide	6,677	
Other Puget Sound Area Ports	Sand-gravel-crushed rock, rafted logs, gasoline	265,864	3,088,513
Seattle District, other Coastal Ports	Fish & products-fresh	200	

EXHIBIT 15
Page 1

COMMERCIAL WATER TRAFFIC
Idaho[43]
1964

Port or River Stretch	Major Commodities	Total Trips	Passengers
Coeur D'Alene Lake & St. Joe River	Rafted logs	2,684	
Pend Greille River	Construction-mining machinery parts	6	

Traffic Statistics for State Ferries
State of Washington [64]
1956-1965

Total Vehicles a

	1965	1964	1963	1962	1961	1960	1959
Seattle-Bremerton	345,991	346,654	323,693	355,368	303,167	301,477	320,635
Seattle-Winslow	635,297	605,646	575,489	549,098	506,365	460,015	473,618
Fauntleroy-Vashon	459,443	431,502	419,195	418,533	381,094	369,957	369,253
Fauntleroy-Southworth	248,784	244,506	240,892	248,240	205,746	183,848	173,541
Vashon-Southworth	28,333	26,106	24,272	27,936	24,155	21,906	20,166
Mukilteo-Columbia Beach	482,451	446,042	432,637	425,372	399,861	387,266	389,076
Lofall-South Point	No Service	No Service	No Service	No Service	258,247	410,962	426,674
Edmonds-Kingston	410,971	384,838	340,876	354,061	266,451	266,380	270,826
Tahlequah-Point Defiance	86,950	85,343	81,402	79,929	77,970	76,561	81,770
Anacortes-San Juan Islands and Sidney, B. C.	145,182	136,691	131,043	157,140	135,967	133,655	130,347
Subtotal	2,843,402	2,707,328	2,569,499	2,615,677	2,559,023	2,612,027	2,655,906
Port Angeles-Victoria, B. C.	No Service	No Service	No Service	No Service	No Service	No Service	39,877
Hood Canal Tool Bridge	706,510	646,711	592,864	603,201	212,563	No Service	No Service
Total	3,549,912	3,354,039	3,162,363	3,218,878	2,771,586	2,612,027	2,695,793

a Includes drivers except between Anacortes-Sidney B.C. and Port Angeles-Victoria, B.C.

EXHIBIT 16
Page 1

EXHIBIT 16
Page 2

Traffic Statistics for State Ferries
State of Washington [64]
1956-1965

Total Vehicles [a]

	1958	1957	1956
Seattle-Bremerton	374,168	395,020	420,765
Seattle-Winslow	453,933	438,108	427,076
Fauntleroy-Vashon	364,327	346,722	330,672
Fauntleroy-Southworth	140,095	143,501	139,329
Vashon-Southworth	20,500	18,133	15,950
Mukilteo-Columbia Beach	397,664	371,494	365,994
Lofall-South Point	422,578	399,967	400,311
Edmonds-Kingston	276,700	262,723	259,460
Tahlequah-Point Defiance	80,505	79,711	77,226
Anacortes-San Juan Islands and Sidney, B. C.	119,526	106,212	106,127
Subtotal	2,649,996	2,561,591	2,542,910
Port Angeles-Victoria, B. C.	31,154	23,458	25,754
Hood Canal Toll Bridge	No Service	No Service	No Service
Total	2,681,150	2,585,049	2,568,664

[a] Includes drivers except between Anacortes-Sidney, B. C. and Port Angeles-Victoria, B. C.

Notes:

From August 13, 1956, the 4,000 lbs trucks were included in Automobile classification.
Southworth Terminal opened September 20, 1958. Harper Terminal closed.
Year round service between Anacortes-Sidney, B.C. commenced February 26, 1959.
Port Angeles-Victoria B. C. service turned over to Black Ball Transport, Inc. in 1960.
Hood Canal Toll Bridge opened August 12, 1961. Lofall-South Point Route suspended August 12, 1961.
From February 1, 1962, the 6,000 lbs trucks were included in the Automobile classification.
High Figures for 1962 due to Century 21 World's Fair which commenced April 21, 1962 and ended October 21, 1962.

EXHIBIT 16
Page 3

Traffic Statistics for State Ferries[64]
State of Washington
1956-1965

Total Passengers [a]

	1965	1964	1963	1962	1961	1960
Seattle-Bremerton	1,237,220	1,207,527	1,218,939	1,665,294	1,237,341	1,248,995
Seattle-Winslow	1,377,040	1,370,477	1,381,298	1,561,014	1,284,237	1,183,113
Fauntleroy-Vashon	548,848	549,879	566,956	607,719	524,883	504,706
Fauntleroy-Southworth	338,266	357,863	363,150	410,789	321,316	307,733
Vashon-Southworth	39,284	36,068	31,458	32,245	29,879	29,544
Mukilteo-Columbia Beach	635,207	596,373	583,601	618,050	553,914	549,569
Lofall-South Point	No Service	No Service	No Service	No Service	347,532	554,704
Edmonds-Kingston	543,195	506,718	458,943	515,339	374,773	394,855
Tahlequah-Point Defiance	120,464	116,618	114,723	114,398	109,593	110,647
Anacortes-San Juan Islands and Sidney, B. C.	303,482	293,531	279,697	413,735	309,379	312,904
Subtotal	5,143,006	5,035,054	4,998,765	5,938,583	5,092,847	5,196,770
Port Angeles-Victoria, B. C.	No Service	No Service	No Service	No Service	No Service	No Service
Hood Canal Toll Bridge	809,355	755,369	700,354	798,843	260,727	No Service
Total	5,952,361	5,790,423	5,699,119	6,737,426	5,353,574	5,196,770

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[a] Fxclusive of Drivers except between Anacortes-Sidney, B.C. and Port Angeles-Victoria

EXHIBIT 16
Page 4

Traffic Statistics for State Ferries[64]
State of Washington
1956-1965

Total Passengers [a]

	1959	1958	1957	1956
Seattle-Bremerton	1,221,133	1,401,486	1,597,426	1,628,206
Seattle-Winslow	1,196,894	1,175,278	1,122,538	1,087,079
Fauntleroy-Vashon	507,314	506,423	488,657	475,461
Fauntleroy-Southworth	286,567	233,042	230,153	214,478
Vashon-Southworth	28,010	25,914	22,483	22,024
Mukilteo-Columbia Beach	547,363	553,503	511,280	489,692
Lofall-South Point	577,393	586,028	542,422	537,398
Edmonds-Kingston	405,227	431,756	388,626	378,268
Tahlequah-Point Defiance	114,058	112,147	104,123	102,843
Anacortes-San Juan Islands and Sidney, B. C.	317,259	284,648	235,897	233,802
Subtotal	5,201,218	5,310,225	5,243,605	5,169,251
Port Angeles-Victoria, B. C.	153,980	133,038	84,863	92,336
Hood Canal Toll Bridge	No Service	No Service	No Service	No Service
Total	5,355,198	5,443,263	5,328,468	5,261,587

[a] Exclusive of Drivers except between Anacortes-Sidney, B. C., and Port Angeles-Victoria

Notes:

Southworth Terminal opened September 20, 1958. Harper Terminal closed.
Year round service between Anacortes-Sidney B. C. commenced February 26, 1959.
No Port Angeles-Victoria, B. C. service in 1960. Service operated by Black Ball Transport, Inc.
Hood Canal Toll Bridge opened on August 12, 1961. Lofall-South Point Route suspended August 12, 1961.
High Figures for 1962 due to Century 21 World's Fair which commenced April 21, 1962 and ended October 21, 1962.

EXHIBIT 17
Page 1

COMMERCIAL WATER TRAFFIC
Alaska[43]
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Ketchikan Harbor	Rafted logs, gas, oil, & distillate fuel oil, gasoline	4	4,132	922	365	3	5,422
Wrangell Harbor	Rafted logs, lumber, and shingles, logs	28	1,329	630	79	10	2,048
Wrangell Narrows	Rafted logs, gas, oil & distillate fuel oil, groceries & food		4,374	865	122		5,361
Petersburg Harbor	Rafted logs, fish and products--fresh, gas oil & distillate fuel oil	less than 1	4,124	615	35		4,774
Sitka Harbor	Rafted logs, wood pulp, logs	19	2,291	616	84	1	2,992
Juneau Harbor	Gas oil & distillate fuel oil, gasoline, groceries & food	less than 1	1,879	722	67		2,668

EXHIBIT 17
Page 2

COMMERCIAL WATER TRAFFIC
Alaska (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic: Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Skagway Harbor	Nonmetallic minerals, commodities, gas oil & distillate fuel oil	76	54	356	13		423
Cordova Harbor	Gas oil and distillate fuel oil, gasoline, fish and products-fresh		2,310	48	3		2,361
Valdez Harbor	Gas oil and distillate fuel oil, gasoline, lumber and shingles		134	24	13	2	173
Seward Harbor	Gas oil and distillate fuel oil, jet fuel, gasoline		37	74	12	12	135
Anchorage	Gas oil and distillate, fuel oil, jet fuel, gasoline	13	506	130	31	32	699
Whittier Harbor	Commodities, groceries and food, lumber and shingles	11	141	130	89	78	438

COMMERCIAL WATER TRAFFIC
Alaska (Cont'd)
1964

Port or River Stretch	Major Commodities	Import and Export Tonnage in % of Total	Number of Trips Inbound Traffic				
			Self-Propelled		Non Self-Propelled		Total Trips
			Under 15' Draft	15' Draft & Over	Under 15' Draft	15' Draft & Over	
Kodiak Harbor	Gas oil and distillate fuel oil, shell fish and products, fish & products-fresh	2	1,315	138	6	2	1,461
Iliuliuk Harbor	Gas oil and distillate fuel oil, gasoline, jet fuel		263	26	15	19	323
Naknek River	Gas oil and distillate fuel oil, jet fuel fish and products-fresh		539	11	49	7	606
Nome Harbor	Gas oil and distillate fuel oil, gasoline, commodities		291	8	291		590

EXHIBIT 17
Page 4

COMMERCIAL WATER TRAFFIC
Alaska
1964

Port or River Stretch	Major Commodities	Total Trips	Passengers
Metlak Atla Harbor	Fish & products-fresh fish & products-canned, gas oil & distillate fuel oil	1,025	4,243
Craig Harbor	Gas oil & distillate fuel oil, commodities, gasoline	136	
Elfin Cove	Gas oil and distillate fuel oil, gasoline	136	
Pelican Harbor	Fish & products-fresh, gas oil & distillate fuel oil, gasoline	2,200	
Seldovia Harbor	Shellfish & products, gas oil & distillate fuel oil, fish & products-fresh	2,736	76
Homer	Gas oil & distillate fuel oil, gasoline, posts-poles-piling	2,258	662
Dillingham Harbor	Gas oil & distillate fuel oil, gasoline, fish & products-fresh	252	
Other Ports Southeastern Alaska	Rafted logs, jet fuel-all types, logs	19,899	33,904
Prince William Sound	Rafted logs, fish & products-fresh, gas oil & distillate fuel oil	519	

EXHIBIT 17
Page 5

COMMERCIAL WATER TRAFFIC
Alaska
1964

Port or River Stretch	Major Commodities	Total Trips	Passengers
Aleutian Island Ports	Gas oil & distillate fuel oil, shellfish & products, jet fuel-all types	837	
Pribilof St. Matthew & St. Lawrence Island	Commodities, gas oil & distillate fuel oil, bituminous coal and lignite	50	
Southerly Side of Alaska Peninsula	Petroleum-crude, residual fuel oil, gas oil & distillate fuel oil	13,191	
Northerly Side of Alaska Peninsula	Gas oil & distillate fuel oil, commodities, sand-gravel-crushed rock	6,072	
Yukon River	Petroleum products, commodities, gas oil and distillate fuel oil	2,959	
Bering Sea Ports, Nuniuak Island to Demarcation Point	Gas oil & distillate fuel oil, commodities, gasoline	1,110	

EXHIBIT 18
Page 1

Number and Registery of Commercial Vessels Arriving in Portland, 1965, 1966 and Puget Sound, 1965

Arriving in Portland [75]
1965, 1966

	1965		1966	
Registery	Number of Vessels	Percent of Total	Number of Vessels	Percent of Total
American	206	18.0%	183	15.7%
British	64	5.6	70	6.0
Canadian	76	6.7	85	7.3
Chinese	22	1.9	22	1.9
Colombian	10	.9	11	.9
Cyprus	0	.0	1	.1
Danish	17	1.5	24	2.1
Dutch	52	4.6	59	5.1
Ecuadorian	6	.5	6	.5
Finnish	1	.1	1	.1
French	2	.2	10	.8
German	42	3.7	34	2.9
Greek	56	4.9	53	4.6
Guinian	1	.1	2	.2
Indian	2	.2	7	.6
Irish	1	.1	0	.0
Israeli	3	.3	3	.3
Italian	24	2.1	27	2.3
Japanese	127	11.1	166	14.3
Korean	8	.7	8	.7
Liberian	123	10.8	111	9.5
Norwegian	179	15.7	170	14.6
Panamanian	18	1.6	17	1.5
Philippine	22	1.9	21	1.8
Spanish	2	.2	2	.2
Swedish	61	5.3	58	5.0
Swiss	0	.0	1	.1
Yugoslavian	16	1.4	11	.9
Total	1747	100.0	1673	100.0

EXHIBIT 18
Page 2

Number and Registery of Commercial Vessels Arriving in Portland, 1965, 1966 and Puget Sound, 1965

Arriving in Puget Sound [76]
1965

Registery	Number of Vessels	Percent of Total
American	1054	48.9%
British a	164	7.6
Chinese	18	.8
Colombian	10	.5
Danish	23	1.1
Dutch	49	2.3
Ecuadorian	5	.2
Finnish	3	.1
French	18	.8
German	68	3.2
Greek	35	1.6
Honduran	1	.1
Indian	17	.8
Italian	38	1.8
Japanese	274	12.7
Korean	1	.1
Liberian	61	2.8
Mexico	1	.1
Norwegian	203	9.4
Panamanian	21	1.0
Philippine	25	1.2
Swedish	49	2.3
Yugoslavian	16	.7
Total	2154	100.0

a Includes Canada, Australia and New Zealand

EXHIBIT 19
Page 1

Piers, Wharves and Docks
Port of Portland, Oregon [77]

Name	Use
Time Oil Co. Wharf	Receipt and shipment of petroleum products; bunkering vessels.
Tidewater Oil Company	Receipt and shipment of petroleum products; bunkering vessels.
Municipal Terminal No. 4, Pier No. 4	Receipt and shipment of general cargo in foreign and domestic trade; receipt of ores, ore concentrates, and other dry bulk commodities, mooring fireboat.
Linnton Terminals	Mooring rafted logs.
Floating Marine Ways Wharf	Mooring vessels for repair.
Corps of Engineers, Mooring Docks A and B	Mooring and outfitting Corps of Engineers' vessels.
Scritsmier Co. Pier No. 2	Mooring rafted logs.
Willamette Tug & Barge Co., Marine Repair Shop Pier	Mooring company-owned floating equipment for repair.
Willamette Tug & Barge Co., Upper Pier	Loading heavy equipment to barges for offside loading to vessels; mooring company-owned floating equipment.
Standard Oil Co. Pier	Receipt and shipment of petroleum products; bunkering vessels.
Swan Island Pier A	Mooring floating drydock and vessels undergoing repairs by private contractors.
General Construction Co. Mooring	Mooring company-owned floating equipment.
Texaco, Inc. Wharf	Receipt and shipment of petroleum products.
General Ore Dock	Receipt of alumina.

EXHIBIT 19
Page 2

Name	Use
Kingsley Lumber Co. Wharf	Shipment of lumber in domestic trade.
Kingsley Lumber Co. Wharf	Shipment of hogged fuel by barge.
Municipal Terminal No. 4, Pier No. 1	Receipt and shipment of general cargo, grain, molasses, and tallow in foreign and domestic trade.
Municipal Terminal No. 4, Pier No. 2	Receipt and shipment of general cargo, molasses, and tallow in foreign and domestic trade.
Municipal Terminal No. 4, Pier No. 5, Sulphur Wharf	Shipment of bulk sulphur.
Municipal Terminal No. 4 Pier No. 5 Oil Wharf	Receipt of fuel oil by Union Pacific Railroad; receipt of petroleum products by Quaker State Oil Refining Co.
Richfield Oil Corp. Wharf	Receipt and shipment of petroleum products; bunkering vessels.
Mobile Oil Co. Wharf	Receipt and shipment of petroleum products; bunkering vessels.
General Construction Co. Pier	Mooring contractor's floating equipment.
Portland Lumber Mills Wharf	Shipment of lumber.
Northwest Natural Gas Co. Wharf	Receipt and shipment of fuel oil.
Scritsmier Co. Pier No. 1	Mooring rafted logs.
Scritsmier Co. Pier No. 3	Mooring rafted logs.
McCormick & Baxter Creosoting Co. Wharf	Receipt of creosote and pentachlorophenol.
Columbia Tug Boat Co. Mooring	Mooring company-owned floating equipment.
Willamette Tug & Barge Co Lower Pier	Receipt and shipment of sand and gravel; mooring company-owned floating equipment for repair.

EXHIBIT 19
Page 3

Name	Use
Pennsalt Chemicals Corp. Wharf	Receipt of bulk salt by self-unloading vessels, receipt of fuel oil for plant consumption; shipment of chlorine and caustic soda.
Shell Oil Co. Pier	Receipt and shipment of petroleum products; bunkering vessels.
Union Oil Co. Pier	Receipt and shipment of petroleum products; bunkering vessels.
Swan Island Dry Dock Pier C	Mooring floating drydock and vessels undergoing repair by private contractors.
Douglas Oil Co. of California Pier	Receipt and shipment of petroleum products.
Shaver Transportation Co., Mooring	Mooring company-owned floating equipment
Gunderson Bros. Eng. Corp. Pier	Mooring vessels and barges for outfitting and repair.
Texaco, Inc. Barge Wharf	Receipt and shipment of petroleum products by barge; mooring and loading barge used for bunkering vessels.
Waterway Terminals Co. Wharf	Receipt and shipment of general cargo by barge.
Continental Grain Co., Portland Elevator Wharf	Receipt and shipment of grain.
Fireboat No. 2 Dock	Mooring fireboat.
Municipal Terminal No. 2 Pier, Berths Nos. 1,2 & 3	Receipt and shipment of general cargo in foreign and domestic trade.
Municipal Terminal No. 2, Pier B	Not used.
Municipal Terminal No. 2, Dock No. 4	Not used.
Northwestern Dock	Receipt and shipment of grain.

Name	Use
Union Pacific Dock	Shipment of paper-manufacturing materials by barge.
Pacific Building Materials Receiving Wharf	Receipt of sand and gravel.
Albina Dock	Receipt and shipment of general cargo in foreign and domestic trade.
Municipal Terminal No. 1 Dock, Berth No. 6	Receipt and shipment of general cargo in foreign and domestic trade.
Municipal Terminal No. 1, Pier A, and Quay Dock, Berths Nos. 1, 2, and 3	Receipt and shipment of general cargo in foreign and domestic trade.
Albina Dock Berth No. 3	Receipt and shipment of general cargo in foreign and domestic trade.
Ross Island Sand & Gravel Co. Mooring	Receipt of sand and gravel.
Permanente Cement Co. Wharf	Receipt of bulk cement.
Albina Engine and Machine Works Piers	Mooring barges and small vessels for outfitting.
Centennial Mills Wharves	Shipment of grain products.
Western Transportation Company Dock	Mooring and maintenance of company-owned vessels; handling supplies.
Louis Dreyfus Corp. Wharf	Receipt and shipment of grain.
Fireboat No. 1 Dock	Mooring fireboat.
Pacific Power & Light Co. Wharf	Receipt of hogged fuel and fuel oil for plant consumption.
Portland General Electric Co., Station L. Wharf	Mooring idle barges.
Willamette Hi-Grade Concrete Co., City Center Dock	Receipt of sand and gravel.

Name	Use
Zidell Explorations, Inc.	Mooring of vessels for shipbreaking; shipment of scrap iron, receipt of steel products.
Pacific Building Materials Loading Pier	Shipment of sand and gravel by barge.
Pacific Building Materials Receiving Pier	Receipt of sand and gravel by barge.
Jones Lumber Corp. Wharf	Shipment of lumber by barge.
Portland Shipbuilding Co. Mooring	Mooring vessels for outfitting and repair.
Ross Island Sand & Gravel Co. Pier	Receipt of sand and gravel.
Tidewater Barge Lines Pier	Receipt and shipment of liquid fertilizer.
Municipal Terminal No. 2, Pier A	Not used.
Willamette Iron & Steel Co. Outfitting Dock	Mooring vessels for repair and conversion.
Pacific Building Materials Wharf	Shipment of sand and gravel.
Municipal Terminal No. 1 Dock, Berths No.7 and 8	Receipt and shipment of general cargo in foreign and domestic trade.
Municipal Paving Plant Wharf	Receipt of paving materials.
Columbia Basin Terminals Wharf	Not used for handling waterborne commerce.
F.H. Peavey & Co. Wharf	Receipt and shipment of grain.
Louis Dreyfus Corp. Barge Dock	Receipt of grain by barge.
Municipal Landing	Mooring harbor patrol boat and recreational craft.
Portland General Electric Co., Station L Oil Wharf	Receipt of fuel oil for plant consumption
Tait Sand and Gravel Co. Wharf	Receipt of sand and gravel.

EXHIBIT 19
Page 6

Name	Use
Ross Island Sand & Gravel Co. Mooring	Receipt and shipment of sand and gravel.
Oregon Portland Cement Co. Wharf	Receipt of limestone by self-unloading barge.

EXHIBIT 20
Page 1

Piers, Wharves and Docks
Port of Coos Bay, Oregon [78]

Name	Use
Fishermens Co-op Association Wharf	Receipt of fish, icing fishing boats; fueling fishing boats, recreational craft, and other types of small craft.
Hanson's Landing	Mooring own commercial sport fishing boats.
Union Oil Co. Marine Dock	Receipt of petroleum products; fueling tugs and towboats; loading barge "Bunker 108" used for bunkering vessels at berth in harbor.
Central Dock Co. Wharf	Shipment of lumber, logs, paper, wood pulp, and baled scrap metal; receipt and shipment of general cargo in foreign and domestic trade.
Empire Tug Co. Dock	Mooring company-owned tugs.
Knutson Towboat Co. Dock	Mooring company-owned tugs and towboats.
Georgia-Pacific Corp. Dock	Coos Head Timber Co.: Shipment of lumber at wharf; receipt of rafted logs at log conveyor. Georgia-Pacific Corp.: Receipt of fuel oil and resin formaldehyde for plywood plant.
Coos County Wharf	Mooring fishing boats.
Pacific Inland Navigation Co. Wharf	Receipt of petroleum products along face; receipt of fish and fueling of fishing boats at lower 200-foot section of rear of face.
Sorenson Lumber Co. Log Dump Pier	Dumping cedar logs into water for making into rafts.
Chambers Fuel Oil Wharf	Receipt of petroleum products by barge.
Weyerhaeuser Co. Log Conveyors and Log Lift	Receipt of rafted logs.
Al Pierce Lumber Co. Bayshore Dock	Shipment and storage of lumber.
U. S. Coast Guard Wharf	Mooring U. S. Coast Guard Vessels.

EXHIBIT 20
Page 2

Name	Use
Hillstrom Shipbuilding Co. Wharf	Mooring various types of small vessels for repair and outfitting.
Elfving's Wharf	Mooring various types of small vessels for repair and installation of marine engines.
Eureka Fisheries Wharf	Receipt of fish; icing fishing boats.
Oregon Coast Towing Co. Wharf	Fueling company-owned tugs.
North Bend City Dock	Shipment of lumber; receipt of fish; icing fishing boats.
Shell Oil Co. Wharf	Receipt of petroleum products by barge.
Standard Oil Co. Wharf	Receipt of petroleum products; fueling tugs and towboats.
Corps of Engineers Wharf	Mooring and handling supplies to and from Corps of Engineers floating equipment.
Coos Bay Sea Food Co. Wharf	Receipt of fish; icing fishing boats.
Ott's Dock	Mooring various types of small vessels for repair and installation of marine engines, and for other machine work.
Al Pierce Lumber Co. Portland Dock	Shipment of lumber.
Coos Head Timber Co., McKenna Mill Wharf & Log Conveyor	Shipment of lumber and plywood by barge at wharf; receipt of rafted logs at log conveyor.
Hallmark Fisheries Dock	Receipt of fish; icing and fueling fishing boats.
Coos Head Timber Co. Dock	Shipment of lumber and wood pulp; mooring harbor pilot boat "Cygnet".
Cape Arago Dock	Shipment of lumber by barge; receipt of rafted logs at log conveyor.
Menasha Corp. Log Conveyor	Receipt of Logs.

EXHIBIT 20
Page 3

Name	Use
Weyerhaeuser Co. Wharf	Shipment of lumber.
Coos Bay Tug & Barge Co. Wharf	Mooring company-owned floating equipment; grading logs.
City of Coos Bay Mooring	Mooring recreational craft and fishing boats.
Georgia-Pacific Corp. Log Lift	Receipt of rafted logs.

EXHIBIT 21
Page 1

Piers, Wharves and Docks[79]
Port of Anacortes, Washington
1963

Name	Use
Shell Oil Co. Anacortes Refinery Wharf	Receipt of crude oil; shipment of petroleum products; and bunkering vessels.
Texaco Anacortes Refinery Wharf	Receipt of crude oil; shipment of petroleum products; and bunkering vessels.
Dunlap Towing Co. Log Dump	Dumping logs into water for shipment by rafting.
Anacortes Veneer Log Lift	Receipt of rafted logs.
Pioneer Shingle Co. Log Conveyor	Receipt of rafted cedar logs.
Scott Paper Co. Barge Wharf	Receipt of alder logs by barge and rafts.
Port of Anacortes Capsante South Pier	Mooring fishing vessels.
Port of Anacortes Capsante 13th Street Pier	Mooring fishing vessels.
Bryant's Marina Boat Hoist and Fueling Dock	Mooring and lifting various types of small vessels into and out of water at pier; and fueling small vessels with gasoline and diesel oil at float.
Robinson's Anacortes Marina Mooring Floats	Mooring fishing vessels, tugs, small U.S. Government vessels, and recreational craft; and fueling small vessels with gasoline and diesel oil.
Port of Anacortes Bulk Handling Wharf	Receipt and shipment of general cargo in foreign and domestic trades; shipment of logs.
Pacific Tow Boat Co. East Pier	Mooring and repairing company-owned and various types of small vessels.

EXHIBIT 21
Page 2

Name	Use
Pacific Tow Boat Co. West Pier	Mooring and repairing company-owned and various types of small vessels.
Port of Anacortes Commercial Ave. Wharf	Receipt and shipment of general cargo in foreign and domestic trade; shipment of dry bulk commodities; mooring vessels.
Standard Oil Co. Wharf	Receipt of petroleum products by barge; fueling small vessels; mooring mail boat.
Curtis Wharf Co. Wharf	Receipt of sand, gravel, and crushed rock by barge; shipment of lumber and building materials by barge and small vessels.
Texaco Dock	Fueling various types of small vessels.
Fishermen's Packing Corp. Wharf	Mooring, fueling, and handling supplies to and from fishing vessels.
Fishermen's Packing Corp. Cannery Wharf	Receipt of fish and cans; shipment of canned fish; icing fishing vessels; and shipment of fish residue by barge to J. E. Trafton & Son Wharf.
Farwest Fisheries Wharf	Receipt of fish; icing, mooring, and handling supplies to and from fishing vessels; and shipment of fish residue by barge to J. E. Trafton & Son Wharf.
Union Oil Co. Wharf	Receipt of petroleum products by barge; fueling various types of small vessels.
Skagit County Anacortes Ferry Slip	Transfer of passengers, automobiles, and trucks to and from ferries operating between Anacortes and Guemes.
Skagit County Guemes Ferry Slip	Transfer of passengers, automobiles, and trucks to and from ferries operating between Guemes and Anacortes.
Nakat Packing Corp. Cannery Wharf	Receipt of fish and cans; shipment of canned fish; mooring and handling supplies to and from fishing vessels.

EXHIBIT 21
Page 3

Name	Use
Sebastian-Stuart Fish Co. Wharf	Receipt of fish and cans; shipment of canned fish; icing, mooring, and servicing fishing vessels; shipment of fish residue by barge to J. E. Trafton and Son Wharf.
Northwest Fur Breeders Co-op Wharf	Receipt of fish for canning and freezing and receipt of herring for processing into fish oil and fish meal at adjacent J. E. Trafton & Son plant.
J. E. Trafton & Son Wharf	Receipt of fish residue by barge from local canneries for processing into fish oil and fish meal.
Anacortes Ferry Terminal	Transfer of passengers, automobiles, and trucks to and from ferries operating between Anacortes and Sidney, British Columbia, Canada; and mooring idle ferry boats.

EXHIBIT 22
Page 1

Piers, Wharves and Docks
Port of Bellingham, Washington [79]
1963

Name	Use
Pacific American Fisheries Marine Railway Mooring	Mooring fishing vessels waiting to be hauled out on marine railway.
Pacific American Fisheries Machine Shop Pier	Mooring small vessels for repair.
Bellingham Canning Co. Pier A	Receipt of fish and cans.
Bellingham Warehouse Co. Pier B	Receipt of canned salmon; shipment of logs.
Pacific American Fisheries Mooring	Mooring company-owned floating equipment.
Cascade Piling Co. Wharf	Receipt of logs; dumping timber piling into water from trucks for shipment by rafting.
United Boat Builders Pier	Mooring and outfitting small vessels.
Fairhaven Truck Log Dump	Dumping logs into water from trucks for shipment by rafting.
Mobile Oil Co. Pier	Not used.
Texaco Pier	Receipt of petroleum products; mooring various types of small vessels.
Northern Pacific Railway Pier	Mooring fishing boats and other small vessels.
Bellingham Boom Co. Truck Log Dump	Dumping logs into water from trucks for shipment by rafting; and receipt of rafted logs.
Milwaukee Railroad Car Float Slip	Not used.
Port of Bellingham Chemical Wharf	Receipt and shipment of bulk liquid chemicals by barge.

EXHIBIT 22
Page 2

Name	Use
Port of Bellingham Car Float Slip	Transfer of railroad cars to and from car floats.
Port of Bellingham Terminal Wharf	Receipt and shipment of general cargo in foreign and domestic trades; receipt of bulk salt and liquid fertilizer.
Port of Bellingham Small Boat Harbor	Mooring fishing vessels.
Georgia-Pacific Corp. Truck Log Dump and Log Conveyor	Dumping logs into water from trucks for shipment by rafting; receipt of rafted logs.
Georgia-Pacific Corp. Wharf	Receipt of wood chips, hogged fuel, sodium bichromate, and fuel oil for plant consumption; shipment of woodpulp, alcohol, and lignosite.
Central Avenue City Transient Dock	Mooring various types of small vessels.
Puget Sound Terminals Pier	Receipt and shipment of general cargo in Puget Sound trade.
Bellingham Tug & Barge Co	Mooring company-owned tugs.
Dahl Fish Co. Wharf	Receipt of fish.
Marine Sales & Equipment Co. Dock	Mooring various types of small vessels for repair.
Bellingham Builders Supply Co. Wharf	Receipt of sand and gravel by barge.
Standard Oil Co. of California Wharf	Receipt of petroleum products; fueling small vessels.
Time Oil Co. Wharf	Time Oil Co.: receipt of petroleum products. Signal Oil Co.: fueling small vessels.
Bornstein Sea Foods Wharf	Receipt and shipment of fish; fueling fishing vessels.

EXHIBIT 22
Page 3

Name	Use
Olivine Corp. Dock	Receipt of lime rock by barge
H. & H. Products Log Conveyor	Receipt of rafted cedar logs.
Wrang Shipyard Co. Mooring	Mooring various types of small vessels for repair.
Holeman & Benson Lumber Co. Log Conveyor	Receipt of rafted logs.
Port of Bellingham Fishing Boat Mooring	Mooring fishing vessels.
Port of Bellingham Purse Seiners Pier No. 5	Mooring fishing vessels; handling fishing supplies.
Port of Bellingham Gill Net Mooring	Mooring fishing vessels; handling fishing supplies.
Weldcraft Steel & Marine Co. Mooring	Mooring various types of small vessels for repair.
Crim Wharf	Mooring various types of small vessels for installation and repair of marine engines and fishing gear and equipment.
Port of Bellingham Outfitting Pier No. 4	Mooring fishing vessels.
U.S. Coast Guard Mooring	Mooring fishing vessels.
Standard Oil Co. of California Pier	Fueling fishing boats and other small vessels.
Bumble Bee Sea Foods Cannery Wharf	Receipt of fish; mooring and repair of company-owned fishing vessels.
Bellingham Cold Storage Co. Wharf	Receipt of fish; mooring fishing vessels.
Mobil Oil Co. Dock	Mooring, fueling, and icing fishing vessels.

EXHIBIT 22
Page 4

Name	Use
Bellingham Cold Storage Co. Wharf	Receipt of fish and seafood.
Port of Bellingham Oil Wharf	Receipt of petroleum products for local distribution.
Frosty Fish Co. Wharf	Receipt of fish and seafood; mooring fishing vessels.
Port of Bellingham Derrick Wharf	Mooring vessels for transferring heavy lifts.
Bellingham Shipyards Co. Pier	Mooring vessels.
Borman's Boat Construction and Repair Mooring	Mooring various types of small vessels for repair.
Mt. Baker Plywood Log Lift and Truck Log Dump	Dumping logs into water from trucks for shipment by rafting; receipt of rafted logs.
Permanente Cement Co. Pier	Shipment of bulk cement.
Mobil Oil Co. Ferndale Refinery Wharf	Receipt of crude oil; shipment of petroleum products; bunkering vessels.
Intalco Aluminum Co. Wharf	Receipt of alumina; shipment of aluminum pigs.

EXHIBIT 23
Page 1

Piers, Wharves and Docks
Port of Everett, Washington [79]
1963

Name	Use
Weyerhaeuser Co. Sulphite Mill, Lime Rock Wharf	Receipt of lime rock by barge.
Weyerhaeuser Co. Sulphite Mill, Log Wharf	Receipt and shipment of bundled logs.
Weyerhaeuser Co. Sulphite Mill, Main Wharf	Receipt of bulk, liquid, caustic soda by barge; shipment of baled and rolled woodpulp.
Weyerhaeuser Co. Sulphite Mill, Hogged Fuel Dock	Receipt of hogged fuel and wood chips by barge.
Port of Everett Pier No. 1	Receipt and shipment of general cargo in foreign and domestic trades.
Everett Boat House Mooring	Mooring, fueling, and servicing various types of small vessels.
Washington City Dock Co. Pier No. 2	Mooring company-owned floating equipment.
American Tug Boat Co. Marine Railway Mooring	Mooring, servicing, fueling, and repairing company-owned, floating equipment.
Port of Everett Pier No. 3	Shipment of logs and lumber by vessel; shipment of general cargo and construction materials and equipment by barge to Alaska; and mooring tugs and barges.
American Tug Boat Co. Wharf	Shipment of general cargo and construction materials and equipment by barge to Alaska; mooring company-owned floating equipment.
Mobil Oil Co. Pier	Receipt of petroleum products by small tankers and barge.

EXHIBIT 23
Page 2

Name	Use
Standard Oil Co. Pier	Mooring and fueling fishing vessels, tugs, and various types of small vessels.
Scott Paper Co. Pier	Receipt of bulk liquid caustic soda by barge.
Scott Paper Co. Main Wharf	Receipt of lime rock and wood chips by barge; shipment of baled woodpulp and wastepaper by vessel.
Scott Paper Co. Log Conveyors	Receipt of rafted logs.
Pacific Tow Boat Co. Everett Terminal Pier	Mooring company-owned, floating equipment.
Pacific Tow Boat Co. Wharf	Shipment of general cargo and construction materials and equipment by barge to Alaska; mooring company-owned, floating equipment; and dumping logs into water for shipment by rafting.
U. S. Naval Reserve Wharf	Mooring U. S. Naval training vessels.
Pacific Terminal Pier E	Mooring Vessels.
Pacific Terminal Pier D	Shipment of general cargo; dumping logs into water for shipment by rafting; and mooring vessels.
Buse Mill Co. Dock	Shipment of wood chips by barge.
Dant & Russell Log Dump	Dumping logs into water for shipment by rafting.
Pacific Terminal Pier C	Mooring company-owned, floating equipment and other small vessels.
Pacific Terminal Pier B	Shipment of logs; mooring vessels.
Pacific Terminal Pier A	Mooring vessels and log rafts.
Everett Plywood Corp. Log Lift	Receipt of rafted logs.
Robinson Plywood & Timber Co. Marina Pier	Mooring and fueling various types of small vessels.

Name	Use
Robinson Plywood & Timber Co. Truck Log Dump	Dumping logs into water from highway trucks for shipment by rafting.
Robinson Plywood & Timber Co. Rail Log Dump	Dumping logs into water from rail cars for shipment by rafting.
Scott Paper Co. Truck Log Dump	Dumping logs into water from highway trucks for shipment by rafting.
Everett Fish Co. Wharf	Receipt of fish; mooring fishing vessels.
Port of Everett 14th Street Net Warehouse and Wharf	Mooring, servicing, and handling supplies to and from fishing vessels.
Fishermen's Boat Shop Marine Railway Mooring	Mooring various types of small vessels for repair.
Morris Boat Repair Wharf	Mooring various types of small vessels for repair.
H. O. Seiffert Co. Stone Dock	Receipt of sand, gravel, and crushed stone by barge.
American Pile Driving Co. Pier	Mooring company-owned, floating equipment.
Tidewater Plywood Corp. Wharf	Mooring barges.
Jamison Lumber & Shingle Co. Log Conveyor	Receipt of rafted logs.
Philchuck Shake & Lumber Co. Log Conveyor	Receipt of rafted cedar logs.
Northwestern Lumber Co. Log Conveyor	Receipt of rafted logs.
Washington Timber Products Co. Log Conveyor	Receipt of rafted logs; dumping logs into water for shipment by rafting.
Scott Paper Co. Preston Point Truck Log Dump	Dumping logs into water from highway trucks for shipment by rafting.
Weyerhaeuser Co. Kraft Mill Oil Wharf	Receipt of fuel oil and bulk liquid caustic soda by barge.

Name	Use
Weyerhaeuser Co. Kraft Mill Barge Wharf & Log Conveyors	Receipt of rafted logs.
Weyerhaeuser Co. Kraft Mill Hogged Fuel & Wood Chip Wharf	Shipment of hogged fuel and wood chips by barge.
Puget Sound By-Products Dock	Receipt of liquid tallow by barge; receipt of fish and fish residue for processing into fish oil and fish meal.
Weyerhaeuser Co. Mill B Truck Log Dump	Dumping logs into water from highway trucks for shipment by rafting.
Weyerhaeuser Co. Mill B Barge Repair Dock	Mooring and repairing barges and scows serving company.
Weyerhaeuser Co. Mill B Hogged Fuel & Wood Chip Wharf and Log Conveyor	Receipt of rafted logs; shipment of hogged fuel, wood chips, and lumber by barge.
Weyerhaeuser Co. Mill B Rail Log Dump	Dumping logs into water for shipment by rafting.
Everett Lumber Co. Truck Log Dump and Log Conveyor	Receipt of rafted logs; dumping logs into water from highway trucks for shipment by rafting.
Northwest Boat Yard Mooring	Mooring various types of small vessels for repair.
Riverside Boat Works Mooring	Mooring various types of small vessels for repair.
Wick Towing Co. Mooring	Mooring of company-owned, floating equipment.
Eclipse Lumber Co. Truck Log Dump	Dumping logs into water from highway trucks for shipment by rafting; and mooring log rafts.
Washington Plywood Co. Log Conveyor	Receipt of rafted logs.
Simpson Paper Co. Wharf and Log Conveyor	Receipt of fuel oil by barge for plant consumption at wharf; receipt of logs at log conveyor.

EXHIBIT 23
Page 5

Name	Use
Simpson Paper Co. Truck Log Dump	Dumping logs into water from highway trucks for shipment by rafting.

EXHIBIT 24
Page 1

Piers, Wharves and Docks
Port of Grays Harbor, Washington [80]
1963

Name	Use
City of Hoquiam Fish Base Pier	Mooring of fishing vessels; receipt of seafood.
Rayonier, Inc., Wharf	Handling company supplies and mooring logging tugs.
Hoquiam River 8th Street Public Float	Mooring fishing boats and other small vessels.
Allman-Hubble Tug Boat Mooring	Mooring and fueling company-owned tugs.
Wise Engine & Machine Co. Wharf and Mooring	Mooring small vessels for repair.
Roy Stritmatter Fish Wharf	Receipt of fish and crabs; icing fishing boats.
Robert Gray Shingle Co. Log Boom	Receipt of rafted logs.
Hoquiam Plywood Company Log Boom	Receipt of rafted logs.
Grays Harbor Veneer Corp Log Boom	Receipt of rafted logs.
Chilman Shipyard Wharf	Mooring small vessels for repair and outfitting.
Quigg Bros.-McDonald, Inc., Main Office Wharf	Mooring contractors' floating equipment.
Rayonier, Inc., Hoquiam Plant Wharf	Receipt and shipment of wood pulp; receipt of rafted logs; and receipt of fuel oil for plant consumption.
Port of Grays Harbor Log Wharf	Receipt of rafted logs, and dumping logs received by truck into water.

EXHIBIT 24
Page 2

Name	Use
Port of Grays Harbor Pier No. 1	Receipt and shipment of general cargo and forest products in foreign and domestic trade; receipt of petroleum products; bunkering vessels by Union Oil Co. of Calif.
Evans Harbor Plywood Products Co. Log Boom	Receipt of rafted logs.
Naval Reserve Wharf	Mooring Naval Reserve training vessels.
Quigg Bros.-McDonald, Inc. Monroe Street Dock	Receipt of sand, gravel, and crushed rock; mooring company-owned floating equipment.
Quigg Bros.-McDonald, Inc. Bunkers Wharf	Receipt of sand, gravel, and crushed rock.
Evans Harbor Products Co. Pier	Receipt of rafted logs.
Anderson & Middleton Wharf	Shipment of lumber, and receipt of rafted logs.
Harbor Fish Co. Wharf	Receipt of fish, and mooring fishing boats.
John Hannula Fish Co. Wharf	Receipt of fish, and mooring fishing boats.
A & B Machine Shop Mooring	Mooring various types of small vessels for repair.
West Coast Fish Co. Wharf	Receipt of fish, and mooring fishing boats.
R. J. Ultican Re-Manufacturing Co. Lumber Wharf	Shipment of lumber; receipt of rafted logs.
Standard Oil Co. Wharf	Receipt and shipment of petroleum products; bunkering vessels.
Western Lumber Inc., Log Boom	Receipt of rafted logs.
Weyerhaeuser Co. Cosmopolis Wharf	Receipt of rafted logs.

EXHIBIT 24
Page 3

Name	Use
E. C . Miller Cedar Lumber Co. Wharf	Receipt of rafted logs.
Rain Forest Shingle Mill Mooring	Receipt of rafted logs.
Weyerhaeuser Co. Aberdeen Saw Mill Wharf	Shipment of lumber; receipt of rafted logs.
Pakonen & Son Marine Repair Mooring	Mooring various types of small vessels for repair and outfitting.
Saginaw Shingle Co. Wharf	Receipt of rafted logs.
Coast Oyster Co. Wharf	Receipt of oysters.
Associated Seafood Co. Wharf	Receipt of oysters.
Westport Shipyard Wharf	Mooring various types of small vessels for repair.
Point Chehalis Packers Dock	Receipt of crabs; mooring floating cannery.
U. S. Coast Guard Pier	Mooring small U. S. Coast Guard and Corps of Engineers vessels.
Port of Grays Harbor Fueling Docks	Fueling fishing boats, recreational crafts, and various other types of small vessels.
Port of Grays Harbor	Receipt of seafood; icing fishing boats; mooring charter sport fishing boats; and handling fishing supplies.

EXHIBIT 25
Page 1

Piers, Wharves and Docks
Port of Longview, Washington[78]
1963

Name	Use
Long-Bell Wharf	Shipment of lumber; receipt of creosote.
Alumina Wharf	Receipt of alumina by self-unloading vessels; receipt and shipment of general cargo in foreign and domestic trade; shipment of logs.
Port of Longview Log Wharf	Receipt and shipment of logs.
Port of Longview Grain Wharf Berth 4	Receipt and shipment of grain; shipment of logs.
Port of Longview Terminal Berths 1, 2, and 3	Receipt and shipment of general cargo in foreign and domestic trade; shipment of tallow and logs; receipt of petroleum products; bunkering vessels.
Weyerhaeuser Company Barge Slip	Receipt of wood chips and hogged fuel.
Weyerhaeuser Company Export Dock	Shipment of lumber and wood pulp.
Weyerhaeuser Company Salt Dock	Receipt of salt.

EXHIBIT 26
Page 1

Piers, Wharves and Docks
Port of Olympia, Washington [80]
1963

Name	Use
Buchanan Lumber Co. Wharf	Receipt of rafted logs.
Delson Lumber Co. Barge Loading and Truck Log Dump	Receipt of rafted logs; shipment of hogged fuel and wood chips.
Hardel Plywood Log Lift	Receipt of rafted logs.
West Side Log Dump	Shipment of logs.
Relieable Welding Works Wharf	Mooring towboats and barges in connection with marine repair plant.
Richfield Oil Corporation Pier	Receipt of petroleum products.
Tumwater Lumber Mills Co. Wharf	Dumping logs into water.
Capital Boom Company Log Dump	Shipment of logs.
Percival Dock	Receipt and shipment of general cargo in foreign and domestic trade.
Union Oil Co. Wharf	Receipt of petroleum products; fueling small vessels.
Olympia Sand and Gravel Co. Wharf	Receipt of sand and gravel by barge.
Foss Launch & Tug Co. Mooring	Mooring company-owned, floating equipment.
Standard Oil Company Wharf	Receipt of petroleum products; fueling small vessels.
Georgia-Pacific Corp. Log Dump	Dumping logs into water.
Port of Olympia Terminal	Receipt and shipment of general cargo and lumber in foreign and domestic trade; shipment of logs; and receipt of petroleum products.

EXHIBIT 26
Page 2

Name	Use
Port of Olympia Oil Wharf	Receipt of petroleum products.
Cascade Treating Co. Barge Slip	Shipment of treated lumber and piling; receipt of rafted logs.
Cascade Treating Co. Barge Pier	Shipment of treated lumber and piling.
Georgia-Pacific Corp., Plant No. 2 Wharf	Receipt of rafted logs.
Graystone of Olympia Wharf	Receipt of sand and gravel by barge.
Olympia Shingle Co. Log Conveyor	Receipt of rafted logs.
St. Regis Paper Log Dump	Shipment of logs.
St. Regis Paper Co. Wharf	Receipt and shipment of rafted logs; shipment of hogged fuel and wood chips by barge.

EXHIBIT 27
Page 1

Piers, Wharves and Docks
Port of Port Angeles, Washington [79]
1963

Name	Use
Rayonier Wharf	Receipt of fuel oil by tanker for plant consumption; receipt of wood chips, hogged fuel, lime rock, and bulk liquid caustic by barge; shipment of baled woodpulp.
Rayonier Log Conveyor and Log Lift	Receipt of rafted logs.
Canadian Pacific Ferry Terminal	Not used.
Angeles Gravel & Supply Co. Pier	Receipt of fish; icing fishing vessels; mooring barges, and U.S. Coast Guard vessels.
Angeles Gravel & Supply Co Wharf	Receipt of sand and gravel by barge.
Black Ball Ferry Slip & Wharf	Transfer of passengers, automobiles, and highway trucks and trailers to and from ferries; receipt and shipment of general cargo in domestic trade.
McMahan Fuel Dock	Supplying galley coal to tugs; mooring various types of small vessels.
Owens Brothers Pier	Mooring company-owned, floating equipment; handling marine construction equipment, supplies, and materials.
Foss Launch & Tug Co. Wharf	Mooring company-owned tugs.
Peninsula Plywood Corp. Wharf and Log Basin	Mooring company-owned tugs at wharf; receipt of logs at log basin.
Peninsula Plywood Corp Wood Chip Dock	Shipment of wood chips by barge.
Port Pier No. 1	Receipt and shipment of general cargo in foreign and domestic trades; receipt of petroleum products; shipment of lumber, logs, and newsprint.
Standard Oil Co. Wharf	Receipt of petroleum products; fueling small vessels.

Name	Use
Port of Port Angeles Log Dump	Dumping bundled and individual logs into water for shipment by rafting.
Dant & Russell Log Dump	Dumping bundled and individual logs into water for shipment by rafting.
Port Angeles Boat Haven Floats	Mooring fishing vessels, tugs, recreational craft, and various types of small vessels for storage, fueling, servicing, and repairing.
Fibreboard Paper Products Corp.	Receipt of fuel oil by tanker for plant consumption, bulk liquid ammonia, wastepaper, and pulp; shipment of boxborad & pulp.
Angeles Shake & Shingle Co. Log Conveyor	Receipt of cedar logs.
Howard Lumber Co. Mooring	Mooring log rafts and barges.
Merrill-Ring Western Lumber Co. Log Dump	Dumping logs into water for shipment by rafting; receipt of logs.
Crown Zellerbach Corp. Log Conveyor	Receipt of logs.
Crown Zellerbach Corp. Barge Dock	Receipt of baled pulp, wood chips, and lime rock by barge.
Crown Zellerbach Corp. Plant Wharf	Receipt of fuel oil for plant consumption and storage; shipment of newsprint; mooring tug at float along west side.
Crown Zellerbach Corp. Tug Wharf	Mooring and handling supplies to and from company-owned tugs.
Crown Zellerbach Corp. Boom Boat Wharf	Mooring company-owned boom boats.
Foss Launch & Tug Co Mooring	Mooring company-owned floating equipment.
Owens Brothers Mooring	Mooring company-owned floating equipment for storage and repair.
Fibreboard Paper Products Corp. Log Dump	Dumping logs into water from trucks for shipment by rafting.

EXHIBIT 27
Page 3

Name	Use
R. J. Johnson Marine Railway Dock	Mooring fishing vessels for repair.
Puget Sound Pilots Association Pier	Mooring harbor pilot boats.
U. S. Coast Guard Wharf	Mooring U. S. Coast Guard vessels.

EXHIBIT 28
Page 1

Piers, Wharves and Docks
Port of Tacoma, Washington [80]
1963

Name	Use
Point Defiance Terminal Ferry Slip	Transfer of highway vehicles and passengers.
Tacoma Smelter Scow Dock	Receipt of ores and ore concentrates; shipment of smelter products.
Tacoma Smelter Copper Dock	Shipment of refine copper; receipt of bagged ore concentrates; receipt of fuel oil for plant consumption.
Tacoma Smelter Ore Dock	Receipt of ore.
Cummings Boat Co. Wharf	Mooring small vessels for repair and outfitting.
Dickman Lumber Co. Wharf	Shipment of lumber; receipt of rafted logs.
Dickman Lumber Co. Hogged Fuel Wharf	Shipment of hogged fuel and sawdust by barge.
Sperry Flour Co. Ocean Dock	Receipt and shipment of bagged flour.
Tacoma Stevedore & Terminal Co., Shed B Wharf	Receipt and shipment of general cargo in foreign and domestic trade.
Tacoma Stevedore & Terminal Co., Shed A Wharf	Receipt and shipment of general cargo in foreign and domestic trade.
Commercial Dock	Receipt and shipment of general cargo in domestic trade.
Pacific Storage Wharf	Receipt and shipment of general cargo in foreign and domestic trade.
Puget Sound Terminal Co., Terminal A Wharf	Receipt and shipment of general cargo in domestic trade.
City Waterway Dock	Mooring vessels.
Johnny's Sea Food Co. Wharf	Receipt of seafood.

EXHIBIT 28
Page 2

Name	Use
Consumers Central Heating Co., Dock Street Steam Plant Wharf	Receipt of hogged fuel by barge.
Fisher Flouring Mills Co. Wharf	Not used for handling waterborne commerce.
Geo. Scofield Co. Sand Dock	Receipt of sand, gravel, crushed rock, and builders supplies by barge.
North Pacific Plywood Log Boom	Receipt of rafted logs.
Graystone Wharf	Receipt of sand, gravel, and crushed rock by barge.
East D Street Log Dump	Shipment of rafted logs.
Martinac Shipyard Wharf No. 2	Mooring vessels for outfitting, conversion, and repair.
Martinac Shipyard Outfitting Wharf No. 1	Mooring vessels for outfitting, conversion, and repair.
Martinac Shipyard Outfitting Wharf No. 3	Mooring vessels for outfitting, conversion, and repair.
Standard Oil Co. Dock	Receipt of petroleum products; loading barge for bunkering vessels at berth in harbor.
Northwest Door Bulkhead	Receipt of logs.
Central Heating Plant, Hogged Fuel Storage Yard Wharf	Receipt and shipment of hogged fuel.
Woodworth & Co. Wharf	Mooring company-owned floating equipment.
Drury & Petrich Dock	Mooring small vessels for outfitting and repair.
Tacoma City Fireboat Slip	Mooring city fireboat.
Globe Machine Wharf	Not used for handling waterborne commerce.
Richfield Oil Corp. Dock	Receipt of petroleum products.
Fick Foundry Wharf	Mooring small vessels.

EXHIBIT 28
Page 3

Name	Use
Mobil Oil Co. Wharf	Receipt of petroleum products; fueling small vessels.
Union Oil Co., Tacoma Marine Terminal Dock	Receipt of petroleum products; fueling small vessels.
Tidewater Oil Co., Tacoma Terminal Dock	Receipt of petroleum products; fueling small vessels.
Puget Sound Plywood Log Boom	Receipt of rafted logs.
Peterson Boat Building Co. Dock	Mooring vessels for outfitting and repair.
Foss Launch & Tug Co. Wharf	Mooring company-owned, floating equipment.
Foss Launch & Tug Co. Pier	Mooring company-owned, floating equipment and floating drydock.
Industrial Engineers & Contractors Dock	Mooring company-owned, floating equipment.
St. Regis Paper Co. Chip Barge Unloading Dock	Receipt of wood chips and fuel oil for plant consumption.
St. Regis Paper Co. Truck Log Dump	Dumping logs for shipment by rafting.
St. Regis Paper Co. Ocean Pier	Not used for handling waterborne commerce.
St. Regis Paper Co. Hogged Fuel Dock	Receipt of hogged fuel by barge.
Donald W. Lyle Plywood Mill Pier	Receipt of rafted logs, and dumping of logs for shipment by rafting.
Milwaukee Railroad Log Dump	Shipment of rafted logs.
Milwaukee Ocean Dock No. 1	Receipt and shipment of general cargo in foreign and domestic trade.
Milwaukee Oil Wharf	Not used.
Milwaukee Ocean Dock No. 2	Receipt and shipment of lumber and general cargo in foreign and domestic trade; receipt of petroleum products for railroad use.

EXHIBIT 28
Page 4

Name	Use
Olson Tug Boat Dock	Mooring tugs and barges.
Milwaukee Railroad Car Float Slip	Transfer of railroad cars to and from railroad car floats.
Tacoma Boatbuilding Co. Dock	Mooring vessels for outfitting and repair.
Milwaukee Boom Co. Rail Log Dump	Dumping logs for shipment by rafting.
Milwaukee Boom Co. Truck Log Dump	Receipt of logs for shipment by rafting.
Port of Tacoma Pier 7	Receipt of dry bulk cargo and logs.
Cascade Pole Co. Sitcum Waterway Plant	Receipt and shipment of rafted poles.
Hammerschmith Truck Log Dump	Receipt of logs.
Cheney Mill Truck Log Dump	Receipt of logs.
Port of Tacoma Pier 5	Receipt of petroleum products; mooring vessels awaiting berth at Port of Tacoma Grain Wharf.
Port of Tacoma Pier 1 Grain Wharf, Berth D.	Shipment of grain.
Port of Tacoma Pier 1, Berths A, B, and C	Receipt & shipment of general cargo and lumber in foreign and domestic trade.
Port of Tacoma Pier 2	Receipt and shipment of general cargo in foreign and domestic trade.
Port of Tacoma Fish Wharf	Mooring fishing boats.
Tacoma Boatbuilding Co. Dock	Mooring small vessels for outfitting and repair.
Port of Tacoma Pier 3, Fishing Boat Mooring	Mooring fishing boats.
Western Boat Building Corp. Outfitting Dock	Mooring small vessels for outfitting and repair.

EXHIBIT 28
Page 5

Name	Use
Concrete Technology Corp. Barge Slip	Shipment of prestressed concrete structural members by barge.
U. S. Oil & Refining Co. Dock	Receipt and shipment of petroleum products.
Pacific Lime, Inc., Wharf	Receipt of limestone.
Port of Tacoma Pier 23, Berths A, B, and C	Shipment of logs; mooring idle vessels and vessels for repair.
Port of Tacoma Pier 24, Berths A and B.	Shipment of logs.
Port of Tacoma Pier 25, Berths A, B, C, and D	Mooring vessels for shipbreaking.
Hooker Chemical Corp. Dock No. 1	Receipt of bulk salt; shipment of industrial chemicals and waste products.
Hooker Chemical Corp. Dock No. 2	Receipt of fuel oil for plant consumption; shipment of industrial chemicals in bulk and containers.
Fletcher Oil Co. Wharf	Receipt and shipment of petroleum products.
Yates Oil Dock	Receipt of petroleum products.
U.S. Naval Reserve Wharf	Mooring U.S. Naval training vessels.
Foss Launch & Tug Co. Mooring	Mooring company-owned barges.
Hart Construction Co. Barge Dock	Mooring barges & handling construction equipment.
Tacoma City Light Steam Plant No. 2 Oil Dock	Receipt of fuel oil for plant consumption; and mooring of barges.
Martinolich Shipbuilding Corp. Pier	Mooring vessels for outfitting and repair; receipt of molasses.
Buffelen Sawmill Wharf	Receipt of rafted logs.
Pennsalt Chemical Corp. Main Wharf	Receipt of bulk salt; raw materials, and fuel oil for plant consumption; shipment of caustic soda.

Name	Use
Concrete Technology Corp. Barge Slip	Shipment of prestressed concrete structural members by barge.
U. S. Oil & Refining Co. Dock	Receipt and shipment of petroleum products.
Pacific Lime, Inc., Wharf	Receipt of limestone.
Port of Tacoma Pier 23, Berths A, B, and C	Shipment of logs; mooring idle vessels and vessels for repair.
Port of Tacoma Pier 24, Berths A and B.	Shipment of logs.
Port of Tacoma Pier 25, Berths A, B, C, and D	Mooring vessels for shipbreaking.
Hooker Chemical Corp. Dock No. 1	Receipt of bulk salt; shipment of industrial chemicals and waste products.
Hooker Chemical Corp. Dock No. 2	Receipt of fuel oil for plant consumption; shipment of industrial chemicals in bulk and containers.
Fletcher Oil Co. Wharf	Receipt and shipment of petroleum products.
Yates Oil Dock	Receipt of petroleum products.
U.S. Naval Reserve Wharf	Mooring U.S. Naval training vessels.
Foss Launch & Tug Co. Mooring	Mooring company-owned barges.
Hart Construction Co. Barge Dock	Mooring barges & handling construction equipment.
Tacoma City Light Steam Plant No. 2 Oil Dock	Receipt of fuel oil for plant consumption; and mooring of barges.
Martinolich Shipbuilding Corp. Pier	Mooring vessels for outfitting and repair; receipt of molasses.
Buffelen Sawmill Wharf	Receipt of rafted logs.
Pennsalt Chemical Corp. Main Wharf	Receipt of bulk salt; raw materials, and fuel oil for plant consumption; shipment of caustic soda.

Name	Use
Kazulin-Cole Shipyard Dock	Mooring small vessels for outfitting and repair.
Tacoma Tug and Barge Co. Dock	Mooring company-owned tugs and barges.
Foss Hylebos Waterway Barge Mooring	Mooring miscellaneous vessels.
Foss Hylebos Waterway Truck Log Dump	Dumping logs for shipment by rafting.
Marine View Boat Building Pier	Mooring small vessels for outfitting and repair.

EXHIBIT 29
Page 1

Piers, Wharves and Docks
Port of Seattle, Washington[81]
1963

Name	Use
Union Oil Company, Pier 71	Receipt and shipment of petroleum products; bunkering vessels; and loading harbor bunkering barges with bunker C and heavy, marine diesel fuel.
Ainsworth & Dunn, Pier 70	Not used for handling waterborne commerce.
American Can Company, Pier 69	Receipt of tin plate and shipment of tin cans.
Georgetown Realty, Inc., Pier 68	Not used.
Bell Street Terminal, Pier 66	Receipt and shipment of general cargo in domestic trade; receipt and shipment of newsprint; and receipt of fish.
Lenora Street Terminal, Pier 65	Receipt of fish; mooring fishing vessels
Lenora Street Terminal, Pier 64	Terminal pier for passenger and vehicular ferry service to Victoria, British Columbia.
Pier 63	Receipt and shipment of general cargo in foreign and domestic trade; receipt of newsprint.
Pier 62	Receipt and shipment of general cargo in foreign and domestic trade; receipt of newsprint.
Piers 61 and 60	Receipt of fish.
Pier 59	Not used for handling waterborne commerce.
Pier 58	Not used for handling waterborne commerce; mooring miscellaneous vessels.
Milwaukee Dock, Pier 57	Receipt of fish.

EXHIBIT 29
Page 2

Name	Use
Pier 56	Not used for waterborne commerce.
Seattle Harbor Tours, Pier 56	Mooring harbor sightseeing boats "Harbor Tourist" and "Wave".
Pier 55	Not used for waterborne commerce.
Pier 54	Receipt of fish.
City of Seattle Fire Station No. 5, Fireboat Float	Mooring for city fireboat.
Washington State Ferries, Seattle Ferry Terminal, Pier 52	Terminal for passenger and vehicular ferries operating between Seattle, Winslow, Bainbridge Island, and Bremerton, Washington.
Pier 51	Not used for handling waterborne commerce.
Pier 50	Not used for handling waterborne commerce.
Washington Street Harbor Police Station No. 1	Base for harbor patrol boats.
Pier 48	Receipt and shipment of general cargo in foreign and domestic trade; shipment of lumber.
Pier 47	Receipt of fish
Pier 46	Receipt and shipment of containerized cargo in foreign and domestic trade.
North Pier 43	Mooring company-owned tugs and barges.
South Pier 43	Shipment of drilling mud (barite); mill scale, ammonium sulphate (fertilizer material), magnesite, and coal.
Alaska Steamship Terminal Pier 42	Receipt and shipment of general cargo in domestic trade (Alaskan), including conventional and containerized cargo.
Pier 39	Receipt and shipment of general cargo in domestic trade (Alaskan).

EXHIBIT 29
Page 3

Name	Use
Pier 37	Receipt and shipment of general cargo in foreign and domestic trade; mooring U.S. Government-owned vessels.
Pier 36	Receipt and shipment of general cargo in foreign and domestic trade.
Albers Dock, Pier 35	Not used.
Tidewater Oil Company, Pier 34	Receipt and shipment of petroleum products; bunkering vessels; and loading harbor bunkering barges.
Standard Oil Co., Pier 32	Receipt and shipment of petroleum products; bunkering vessels; and loading harbor bunkering barges.
San Juan Fishing & Packing Co., Pier 31	Receipt of fish.
Stacy Street Terminal, Pier 30	Receipt and shipment of general cargo in Puget Sound trade; vehicular freight terminal.
Lander Street Terminal, Pier 29	Receipt and shipment of general cargo in foreign trade.
Pier 28	Receipt and shipment of general cargo in foreign and domestic trade.
Chicago, Milwaukee, St. Paul and Pacific Railroad Car Ferry Dock, Pier 27	Transfer of freight cars to and from car floats.
Hanford Street Grain Terminal, Pier 25 (West)	Shipment of grain.
Hanford Street Terminal, Pier 25 (South)	Receipt and shipment of canned salmon.
Spokane Street Terminal, Pier 24 (North)	Receipt and shipment of canned salmon in foreign and domestic trade.
Spokane Street Terminal, Pier 24 (West)	Receipt of fish; icing boats.

EXHIBIT 29
Page 4

Name	Use
Elliott Bay Mill Co. Log Lift	Receipt of rafted logs.
Pioneer Sand & Gravel Co. Wharf, Pier 23	Receipt of sand and gravel.
East Waterway Terminal, Pier 20	Receipt and shipment of general cargo in foreign and domestic trade; receipt of bulk urea, molasses, and fish oil; shipment of tallow, steel products, and logs.
Shell Oil Co. Wharf, Pier 19	Receipt and shipment of petroleum products; bunkering vessels; and loading harbor bunkering barges with bunker C and marine diesel fuel.
Todd Shipyards Corporation Plant A, Pier 18	Not used.
Pier 17	Mooring company-owned floating equipment for repair.
Coastal Co. Car Barge Dock, Pier 16	Transfer of railroad cars to and from car barges operating between Seattle and Alaska.
Mobile Oil Co. East Pier	Receipt and shipment of petroleum products; bunkering vessels; and loading harbor bunkering barges.
Mobile Oil Co. West Pier	Receipt and shipment of petroleum products; bunkering small vessels.
Todd Shipyards Corporation, Pier No. 7	Mooring vessels for outfitting and repair; berth for Floating Drydock No. 2.
Todd Shipyards Corporation, Pier No. 6	Berths for Floating Drydocks Nos. 1 and 3.
Todd Shipyards Corporation, Pier No. 5	Berth for Floating Drydocks No. 4; mooring vessels for outfitting and repair.
Todd Shipyards Corporation, Pier No. 4	Mooring vessels for outfitting and repair.

Name	Use
Todd Shipyards Corporation, Pier No. 3	Mooring vessels for outfitting and repair.
Todd Shipyards Corporation, Pier No. 2	Mooring vessels for outfitting and repair.
Todd Shipyards Corporation, Pier No. 1	Mooring vessels for outfitting and repair.
Richfield Oil Corp. Wharf, Pier No. 11	Receipt and shipment of petroleum products; bunkering vessels; and loading harbor bunkering barges with bunker C and marine diesel fuel.
Puget Sound Bridge & Dry Dock Co., Plant No. 1, Pier No. 1	Mooring vessels for outfitting and repair.
Puget Sound Bridge & Dry Dock Co., Plant No. 1, Pier No. 2	Mooring vessels for outfitting and repair.
Puget Sound Bridge & Dry Dock Co., Plant No. 1, Pier No. 3	Mooring vessels for outfitting and repair.
Puget Sound Bridge & Dry Dock Co., Plant No. 1, Pier No. 4	Mooring vessels for outfitting and repair.
Fisher Flouring Mills Co. Harbor Island Dock	Receipt and shipment of grain, feed, and flour.
The Olympic Portland Cement Co. Wharf	Receipt of cement by barge.
Elliott Bay Mill Co. Barge Pier	Receipt and shipment of lumber by barge.
Lone Star Cement Corp. Wharf	Receipt of lime rock, slag, and sand; shipment of bulk cement.
The Boeing Co., Missile Production Center Wharf	Not used for handling waterborne commerce.
Pioneer Towing Co. Wharf	Mooring company-owned towboats and floating equipment.
Manson Construction Co. Wharf	Mooring company-owned floating equipment.

Name	Use
United States Plywood Corp. Wharf, Log Lift and Barge-loading Berths	Receipt of rafted logs at vertical log lift; shipment of lumber, hogged fuel, and wood chips.
Permanente Cement Co. Wharf	Receipt and shipment of bulk cement; receipt of gypsum rock.
Glacier Sand & Gravel Co. Wharf	Receipt of sand and gravel by barge.
Larsen Construction Co. Wharf	Mooring company-owned floating equipment; transfer of construction equipment and materials to and from barges.
Fred J. Fischer Wharf	Receipt of canned salmon; mooring company-owned vessels and floating equipment for winter storage and/or repairs.
S. S. Mullen, Inc., Wharf	Receipt and shipment of construction materials and equipment.
Peter Pan Seafoods Wharf	Mooring company-owned vessels and floating equipment for storage and/or repair.
Hydraulic Supply Mfg. Co., Inc., Wharf	Not used for handling waterborne commerce.
J. A. Jack & Sons, Inc., Dock	Receipt of limestone by barge.
Northwest Asphalt Co. Dock	Receipt of crushed stone by barge.
Monsanto Chemical Co., Seattle Plant Barge Wharf	Receipt of caustic, and waste sulphite liquor; shipment of raffinate for disposal.
San Juan Concrete Products Barge Ramp	Receipt of sand and small-sized stone by barge.
Graystone of Seattle, Ready Mix Barge Ramp	Receipt of sand and gravel by barge.
Duwamish Shipyard, Inc., Dock	Mooring vessels for outfitting and repair.
General Construction Co., Yard 2 Wharf	Not used.

Name	Use
Ideal Cement Co., Seattle Terminal Docks	Receipt and shipment of cements; handling supplies to own vessels.
Seaborad Lumber Co. Pier, Barge-Loading Stations, and Log Conveyor	Shipment of lumber, hogged fuel, and wood chips; receipt of logs at conveyor.
Alaska Freight Lines, Inc., Wharf	Receipt and shipment of general cargo in domestic trade (Alaska), including containerized cargo.
General Construction Co. South Wharf	Mooring and repairing company-owned, floating equipment; shipment of prestressed concrete piles and beams.
General Construction Co. North Wharf	Mooring and repairing company-owned, floating equipment.
Nelson & Hansen Boat Works Pier	Mooring various types of small vessels for repair.
National Fruit Canning Co. Wharf	Not used for handling waterborne commerce.
West Waterway Lumber Co., Barge-loading Berth	Shipment of hogged fuel by barge.
West Waterway Lumber Co. Mill Wharf	Shipment of lumber; receipt of rafted bundled cants.
Drummond Lighterage Co. Wharf	Receipt and shipment of general cargo in domestic trade (Alaska), including containerized cargo; shipment of lumber and bagged cement to points in Alaska; mooring tugs.
West Waterway Terminal, Pier 5	Receipt and shipment of general cargo including containerized cargo in foreign and domestic trade; receipt of automobiles and fuel oil; shipment of scrap metal.
West Waterway Banana Terminal, Pier No. 5	Receipt of bananas.
Puget Sound Dredging Co. Pier	Mooring company-owned floating equipment.

Name	Use
Puget Sound Bridge & Dry Dock Co., Plant No. 2, Pier No. 1	Mooring vessels for outfitting and repair; berthing Floating Drydocks Nos. 2 and 3
Puget Sound Bridge & Dry Dock Co., Plant No. 2, Pier No. 2	Mooring vessels for outfitting and repair; berth for Floating Drydock No. 1
Nettleton Lumber Co. Pier	Shipment of lumber by barge.
Baxter-Wyckoff Co., East Log Wharf	Receipt of rafted logs, and logs by barge.
Baxter-Wyckoff Co., North Piers and Marine Slip	Receipt of creosote and rafted logs; shipment of lumber, treated piling, and ties.
Baxter-Wyckoff Co., West Barge Slip	Shipment of lumber, treated piling, and ties.
Van Vetter Wharf	Not used for handling of waterborne commerce.
Washington State Ferries, Fauntleroy Ferry Terminal	Terminal for passenger and vehicular ferries operating between Seattle, Southworth, and Vashon Heights, Vashon Island, Washington.
Corps of Engineers Wharf	Mooring Government vessels and floating equipment.
Railwater Terminal Co. Wharf	Receipt of scrap metal by barge; shipbreaking; and mooring miscellaneous floating equipment.
D and S Salvage Co. Wharf	Mooring and dismantling company-owned vessels.
Seattle Ship Building & Dry Docking Corp. West Pier	Mooring various types of small vessels for repair.
Seattle Ship Building & Dry Docking Corp. East Pier	Mooring various types of small vessels for repair.
Ballard Docks West Pier	Mooring fishing boats and various types of small vessels.

Name	Use
Ballard Docks East Pier	Mooring fishing boats and various types of small vessels.
Ballard Oil Co. Pier	Fueling and mooring fishing boats, tugs, and various types of small vessels.
Rowe Machine Works Pier	Mooring fishing boats, tugs, barges and various types of small vessels for repair.
Rowe Machine Works, and Pacific Fishermen Pier	Mooring fishing boats, tugs, barges, and other types of small vessels for repair.
Pacific Fishermen Main Pier	Mooring fishing boats, tugs, barges, and other types of small vessels for repair.
Harbor Patrol Station No. 2 Pier	Mooring harbor-patrol boats.
C. D. Stimson Co. Pier	Mooring miscellaneous boats; and company-owned research vessels.
Salmon Bay Sand & Gravel Co. Wharf	Receipt of sand and gravel by barge.
Standard Oil Co. Piers	Fueling fishing boats, tugs, and other types of miscellaneous vessels.
Tidewater Oil Company, Ballard Marine Station Pier	Fueling small craft, fishing boats, tugs, and miscellaneous small vessels.
Sagstad Marina, Inc., Wharf	Mooring miscellaneous commercial vessels for repair.
Seattle Cedar Lumber Mfg. Co. Log Conveyor and Barge Berth	Receipt of rafted logs; shipment of wood chips.
Halibut Producers Cooperative, Wharf and Pier	Mooring and icing fishing boats.
Phoenix Shingle Company, Log Conveyor and Barge Mooring	Receipt of rafted logs; shipment of wood chips.

Name	Use
Ownes Pacific Northwest, Inc., Wharf	Mooring various types of small commercial vessels for repair.
Mobil Oil Co. Pier	Receipt of petroleum products.
Northwest Steel Rolling Mills Wharf	Receipt of scrap metal and lime rock.
Ocean Marine Corp. Wharf	Mooring various types of small commercial vessels for repair.
Northland Freight Lines Wharf	Receipt and shipment of general cargo in domestic trade (Alaska).
Pioneer Sand and Gravel Co. Wharf	Receipt of sand and gravel by barge.
Washington Asphalt Co. Wharf	Receipt of sand and gravel by barge.
King County Pier	Mooring fishing boats and various types of small vessels for repair.
MPE-Marine Power & Equipment Co. Wharf	Mooring vessels for salvage, shipbreaking, conversions, and repair.
Kenai Salmon Packing Co. Pier	Mooring fishing vessels, scows, and tenders; off-season repairs to fishing vessels.
Standard Oil Co. Piers	Receipt of petroleum products; fueling fishing boats and other types of small vessels.
Washington Natural Gas Co. Piers	Not used for handling waterborne commerce.
Pioneer Sand & Gravel Co., Barge Mooring	Receipt of sand and gravel by barge.
Glacier Sand & Gravel Co. Wharf	Receipt of sand and gravel by barge.
Glacier Sand & Gravel Co., Island Barge Mooring	Receipt of sand and gravel by barge.
Wards Cove Packing Co. Pier	Mooring company-owned fishing boats.

Name	Use
Glacier Sand & Gravel Co., Ravena Plant, Barge Docks	Receipt of sand and gravel by barge.
Sebastian-Stuart Fish Co., and Aleutian Marine Transport Co. Pier	Mooring and repairing company-owned, fishing vessels; receipt and shipment of freight; and passenger service during summer season.
Applied Physics Laboratory Floating Pier	Mooring vessel used in connection with underwater research.
Blanchard Boat Co. Wharf	Mooring boats for outfitting and repair.
Lake Union Terminals Piers	Mooring, repairing, and outfitting company-owned, fishing boats.
Lake Union Terminals Wharf	Mooring, repairing, and outfitting company-owned, fishing boats.
McCray Marine Construction Co. Pier	Mooring company-owned, floating equipment.
U. S. Coast & Geodetic Survey Ship Base Wharf	Mooring U. S. Coast and Geodetic Survey vessels; handling supplies and equipment.
U. S. Coast & Geodetic Survey Ship Base Middle Pier	Mooring U. S. Coast and Geodetic Survey vessels; handling supplies and equipment.
U. S. Coast & Geodetic Survey Ship Base South Pier	Mooring U. S. Coast and Geodetic Survey vessels; handling supplies and equipment.
Lake Union Dry Dock Co. North Pier	Berth for floating drydock; mooring vessels for outfitting and repair.
Lake Union Dry Dock Co. Center Pier	Berth for floating drydocks; mooring vessels for outfitting and repair.
Lake Union Dry Dock Co. Center Wharf	Berths for floating drydocks; mooring vessels for outfitting and repair.
Lake Union Sales Co. Pier	Mooring fishing boats and recreational craft.
City of Seattle, Light Department Pier	Receipt of fuel oil.

Name	Use
King County Wharf	Shipment of produce and supplies to Alaska; mooring fishing boats.
St. Vincent de Paul Pier No. 2	Mooring vessels, fishing boats, tugs, and charter boats.
St. Vincent de Paul Wharf No. 1	Mooring vessels
Pioneer Sand & Gravel Co. Pier	Receipt of sand and gravel.
H.C. Henry Investment Co. Pier	Not used.
City of Seattle, Asphalt Plant Mooring	Receipt of sand and crushed rock for asphalt plant.
U. S. Naval and Marine Reserve Wharf	Mooring Naval Reserve training vessels.
NC Marine Pier	Mooring commercial, fishing, and pleasure boats for engine repairs and installations.
Commercial Marine Construction Co. Pier	Mooring fishing boats.
Grady Boat Company Wharf	Mooring fishing boats and various types of small vessels for repair.
Graystone Barge Ramp	Receipt of sand and gravel by barge.
Foss Launch & Tug Co. East Pier	Mooring and repairing company-owned vessels and floating equipment.
Foss Launch & Tug Co. Center Pier	Mooring and repairing company-owned vessels and floating equipment.
Foss Launch & Tug Co. West Pier	Berth for floating drydock; mooring and repairing company-owned vessels and floating equipment.
Foss Launch & Tug Co. Barge-loading Wharf	Shipment of freight by barge in domestic trade.
United States Plywood Corp., Log Conveyor and Barge Berth	Receipt of rafted logs; shipment of wood chips.

Name	Use
Fishermen's Terminal, Marine Railway Floating Pier	Mooring and repairing fishing vessels.
Fishermen's Terminal, Pier D	Fueling, mooring, and repairing fishing vessels.
Fishermen's Terminal, Pier E	Fueling, mooring, and repairing fishing vessels.
Fishermen's Terminal, Pier F	Mooring and repairing fishing vessels.
Fishermen's Terminal, Piers G, H, J, K, and L	Mooring and repairing fishing vessels.
Fishermen's Terminal, West Terminal Wharf	Mooring fishing vessels.
Fishermen's Terminal, Pier 11	Passenger landing and mooring excursion and sightseeing boats.
Gilbert Pile Driving Co. Wharf	Transfer of construction materials and equipment to and from barges.
Marine Construction and Design Co., Draper Pier	Mooring fishing boats and various types of small commercial vessels for repairs.
Marine Construction and Design Co., Engine Shop Pier	Mooring fishing boats and various types of small commercial vessels for repair.
Marine Construction and Design Co., Vertical Boat Lift Pier	Mooring fishing boats and various types of small commercial vessels for repair.
Marine Construction and Design Co., West Floating Pier	Mooring fishing boats and various types of small commercial vessels for repair.
Fidalgo Island Packing Co. Pier	Mooring and repairing company-owned fishing vessels; transfer of supplies and equipment.
Jos. E. Most Pier	Mooring fishing boats.

Name	Use
Maritime Shipyard, East Wharf	Mooring fishing boats, tugs, barges, and various types of small vessels for repair.
Maritime Shipyard, West Wharf	Mooring fishing boats, tugs, barges, and various types of small vessels for repair.
U. S.Coast Guard, East Pier	Mooring U. S. Coast Guard vessels.
U. S. Coast Guard Wharf	Mooring U. S. Coast Guard vessels.
U. S. Coast Guard, West Pier	Mooring U. S. Coast Guard vessels.
Time Oil Company Wharf	Receipt and shipment of petroleum products; fueling small vessels; and loading harbor-bunkering barges.
Standard Oil Co. Wharf	Receipt and shipment of petroleum products; shipment of packaged and drummed products; bunkering vessels and loading harbor-bunkering barges.
American Bitumuls & Asphalt Co. and Standard Oil Co., North Pier	Receipt of asphalt; shipment of cut-back asphalt products; receipt and shipment of petroleum products.
Union Oil Company Wharf	Receipt and shipment of petroleum products and petrochemicals; bunkering vessels; and loading harbor-bunkering barges.
Tri-City Sand & Gravel Co. Wharf	Receipt of sand and gravel by barge.
Washington State Ferries, Edmonds Ferry Terminal	Terminal for passenger and vehicular ferries operating between Edmonds and Kingston, Washington.
The Boeing Co., Renton Plant Pier	Receipt of fuel oil for plant consumption; mooring company-owned crash boats.
Puget Sound Power & Light Co., Shuffleton Steam Plant Pier	Receipt of fuel oil for plant consumption.

Name	Use
Puget Sound Power & Light Co., Plant Wharf	Mooring company-owned cable ship.
Scott Pacific Terminal, Log Dump	Dumping logs into water.
J. H. Baxter & Co., Kennydale Log Dump	Dumping logs in water.
Barbee Mill Co. Pier & Log Dumps	Receipt and shipment of rafted logs; shipment of lumber.
Reilly Tar & Chemical Corp. Wharf and Pier	Receipt of tar and creosote oil; shipment of tar distillates.
J. H. Baxter & Co., Port Quendall Treatment Plant Wharf	Receipt of rafted logs.
Skinner Corporation South Pier	Mooring idle vessels owned by Alaska Steamship Company.
Skinner Corporation North Pier	Mooring idle vessels owned by Alaska Steamship Company.
Standard Oil Co. Pier	Receipt of petroleum products.
Richfield Oil Corp. Pier	Receipt of petroleum products.
Pioneer Towing Co. Log Dump	Shipment of rafted logs.
Pope and Talbot Barge Transfer Bridges	Receipt of lumber by barge.
Kenmore Building Materials Wharf	Receipt of sand and gravel.
Pope and Talbot Log Dump Pier	Dumping logs into water.

EXHIBIT 30
Page 1

Piers, Wharves and Docks[78]
Port of Vancouver, Washington
1963

Name	Use
Pacific Inland Navigation Co. Wharf	Mooring company-owned floating equipment.
Port of Vancouver Oil Dock	Receipt and shipment of petroleum products.
Port of Vancouver Terminal #2	Receipt of shipment of general cargo and dry bulk commodities in foreign and domestic trade; handling heavy lifts.
Port of Vancouver Dolphin Berth	Shipment of logs; mooring for transfer of general cargo between vessel and barge, including heavy lifts.
Vancouver Grain Elevator Wharf	Receipt and shipment of grain and grain products.
Fort Vancouver Plywood Co. Log Lift	Receipt of logs.
Ideal Cement Company Pier	Receipt and shipment of bulk cement; receipt of petroleum products.
Boise Cascade Corp. Log Lift	Receipt of logs.
Port of Vancouver Terminal #1	Receipt of shipment of general cargo and lumber in foreign and domestic trade.
Pacific Building Materials Dock	Receipt of sand and gravel.
U. S. Coast Guard Dock	Berthing government vessels.
FMC Corporation Oil Pier	Receipt of fuel oil for plant use.
Russell Towboat Landing	Mooring and repairing company-owned floating equipment.

EXHIBIT 31
Page 1

Commercial Fisheries
State of Oregon[32]

EXHIBIT 31
Page 2

COMMISSIONERS
HERMAN P. MEIERJURGEN CHAIRMAN BEAVERTON
EDW. G. HUFFSCHMIDT PORTLAND
LEONARD N. HALL CHARLESTON

STATE OF OREGON
FISH COMMISSION OF OREGON
307 STATE OFFICE BLDG. 1400 S. W. 5TH AVENUE
PORTLAND 97201

January 26, 1967

Mr. David Clark
Sanitary Engineer
Federal Water Pollution Control Administration
Pacific Northwest Water Laboratory
200 South 35th Street
Corvallis, Oregon 97330

Dear Mr. Clark:

This is in answer to your letter of December 23, 1966 to Mr. Robert W. Schoning, State Fisheries Director, requesting information relative to the commercial fishing fleets operating from Oregon's ports and the number of boats involved in the Willamette River spring chinook sport fishery.

Several types of commercial fishing operations are conducted from Oregon's ports. The Fish Commission issues a common boat license for vessels involved in the following fisheries: Columbia River gillnet, troll salmon and tuna, crab, otter trawl, longline, and coastal river gillnet and setnet. A total of 1,868 such licenses were issued in 1966 for vessels which were either home based or regularly landing fish in Oregon ports. Many vessels from Washington and California are in the latter group.

We do not routinely record information concerning the number of vessels involved in a fishery during a particular season, especially where several hundred boats of varying dimensions and characteristics are included. The information we are furnishing you on the number of vessels by fishery and by port are mostly estimates of what the actual values might be if a detailed survey were made. Depending on availability, most values are for years 1965 or 1966. These values were obtained from members of our research staff and from the Bureau of Commercial Fisheries. Their variation in accuracy is partially dependent upon the total size of a particular fleet.

Commercial fishing vessels commonly enter more than one fishery in Oregon, although, they may be primarily designed and equipped to function in a certain fishery. In most cases it would require a considerable effort to further distinguish between vessels that are used in more than one fishery or to enumerate fishing intensity by time for each fishery.

EXHIBIT 31
Page 3

The Columbia River gillnet fishery is conducted within the Columbia River from its mouth upstream 140 miles to the commercial fishing deadline 5 miles below Bonneville Dam. Normally there are five basic fishing seasons for salmon and steelhead trout that coincide with runs of these fish into the Columbia River. In addition, there are several special seasons for gillnetting for other species in the Columbia River. We have included all the Columbia River seasons in Table 1 for your reference. Most of the fishing intensity is in the lower 100 miles or so of the river. The center of the processing industries is at Astoria, Oregon. Major packing companies have fish receiving facilities located along the river. We have enclosed a list of the Astoria based companies and some others so that you may pursue the number and location of their buying stations and processing plants with each. Incidentally, several of the Astoria companies have stations at many of our other coastal ports for receiving the products of other fisheries.

We do not know the exact number of boats involved in the gillnet fishery. However, the Fish Commission does issue a special gillnet license to persons conducting this type of operation. In 1966 we issued 421 gillnet licenses and the Washington Department of Fisheries issued 215 similar licenses all for fishing on the Columbia River. Our estimate for the number of boats in this fishery is 560, although the number actually fishing varies widely during a season and between seasons. One reason the number of boats does not agree with the total licenses issued is because in some instances more than one person is fishing with the same boat. Most of the Columbia River gillnet boats are from 24 to 30 feet in length with a crew of one person. Fishing trips are usually less than one day in duration, although, again these are generalizations.

The troll salmon and tuna fishing fleets both operate in the ocean. In general, the troll salmon fleet fishes the inshore areas, out approximately as far as the continental shelf, while the tuna fleet usually operates much further at sea. The troll salmon season is from April 15 to October 31 for chinook salmon and from June 15 to October 31 for coho salmon. Many Oregon based vessels begin the troll season off the coast of Washington and work closer to their home port as the season progresses. The number of salmon troller, tuna, and crab vessels landing in Oregon and the estimated total personnel for calendar year 1965 have been determined by the Bureau of Commercial Fisheries at Seattle. These values, summarized in Table 2, were taken from buyers' reports and field interviews. In 1965 a total of 892 salmon trollers landed fish in Oregon. Our research staff estimates that approximately 73 percent of the troll fleet are day boats or those fishing during the day and returning to port each night, and usually having a one-man crew. The remainder are trip boats that fish for longer periods of time and operate with larger crews. A typical distribution of the troll salmon fleet operating from Oregon ports is given in Table 3.

The tuna fleet is composed of local boats and many vessels from out of state. A total of 457 vessels landed tuna in Oregon during 1965 (Table 2). It appears

EXHIBIT 31
Page 4

that there was an increase in landings this past year. Generally, tuna vessels carry a crew of two to six men depending upon the size of vessel. The normal stay at sea for Oregon based tuna boats is seven to ten days depending on the weather. There is no statutory season and fishing is intensely pursued when tuna are available generally from July through October.

Oregon's crab season extends from December 1 until August 15 in areas open to fishing. Regarding the crab fishing fleet, Table 2 gives the number of crab boats landing in Oregon for 1965 while Table 4 shows a typical distribution of vessels by port. In recent years, the crab fleet has usually varied from 115 to 170 vessels landing in Oregon's ports. The 1965 total was 169 vessels. Most of these are from 30 to 62 feet in length and are manned by one to three persons depending on the size of ship. Three-day trips are routine for vessels operating out of Newport while single day trips are more common at other ports.

The trawl fishery functions are nearly year-round for bottomfish and from March 1 until October 31 for shrimp. Table 5 gives information on this fishery. In 1966, 59 trawlers fished from Oregon ports. The information was taken from fishermen's logbooks by members of our research staff. As you can see, the California shrimp boats are indicated as well as the number of shrimp boats engaged in fishing for crab during the winter months. As mentioned before, additional separation of vessels entering more than one fishery as the bottomfish trawlers which may fish for crab or that may enter the troll salmon or tuna fisheries is not easily obtainable.

Table 6 summarizes the number and other pertinent information for the longline vessels landing fish in Oregon. These vessels are fishing primarily for halibut during the summer and fall months.

The coastal shad and striped bass fishery is mainly conducted in the lower end of the tributaries of several south and mid-coast bays. The fishing areas are under definite tidal influence. Table 7 shows the number of boats (48) for which licenses were issued to individuals in this fishery. Fishing seasons for shad and striped bass are also given in Table 7. The majority of these boats are probably less than 20 feet in length and have a crew of one person. Generally these boats are operated for only a few hours each day while used in the fishery.

The Willamette River spring chinook sport fishery exists from just below Willamette Falls (at Oregon City) to the mouth of the Willamette River and throughout Multnomah Channel to St. Helens, Oregon.

The estimated number of boats in the Willamette River sport fishery is given in Table 8. The main fishing period is self-evident from the weekly values given. The estimate is based on a sampling technique involving aerial boat counts and records kept by boat moorage operators. The total number of boats (40,815) does not account for all those fishing early or late in the season, however, we believe these to be a small part of the total. We use an average of 2.1 anglers per boat for this fishery.

Concerning our recommendations for the need of sanitation facilities aboard commercial fishing vessels, it is difficult to state what size or what type of vessels should be included. To the best of our knowledge, conventional marine sanitation facilities are to be found on most of the larger boats and vessels and a few of the smaller ones. Certainly those with a crew of more than one or two persons could be considered for better waste disposal methods. We suggest that a more detailed survey of vessels of five tons or greater displacement be made with this need in mind.

You might also consider the need for sanitation facilities on the larger pleasure craft as these are particularly concentrated at moorages along the lower Willamette River below Oregon City.

At your meeting with Mr. Schoning earlier this month, you expressed an interest in sources of pollution from watercraft that the Fish Commission has documented. In this regard, I am enclosing copies of interdepartmental memorandums and other material which describe a few of the pollution problems of this type we have investigated. The nature of each problem is self-explanatory.

I hope the information contained in this letter will be of value to you in your present survey of pollution sources. Please feel free to contact our department if you desire further assistance in this regard.

Sincerely,

C. A. Weberg

C. A. WEBERG, ASSISTANT
STATE FISHERIES DIRECTOR

Enclosures

EXHIBIT 31 –
Page 6

Table 1. Commercial Fishing Seasons for the Columbia River, 1966.

Open Area - Waters west of a line 5 miles below Bonneville Dam. Regular open seasons - (except Camas-Washougal area, Elokomin Slough and Willamette Slouth).

Winter Season

February 15, 12:00 a.m. to March 1, 12:00 p.m.

Spring Season

May 1, 6:00 p.m. to May 6, 6:00 p.m.
May 8, 6:00 p.m. to May 14, 6:00 p.m.
May 15, 6:00 p.m. to May 21, 6:00 p.m.
May 22, 6:00 p.m. to May 27, 12:00 a.m.

No Summer Season in 1966

Early Fall Season

July 29, 1:00 p.m. to August 27, 1:00 a.m.

Late Fall Season

September 19, 12:00 a.m. to September 23, 12:00 a.m.
September 26, 12:00 a.m. to October 1, 12:00 a.m.
October 2, 6:00 p.m. to October 7, 12:00 a.m.
October 10, 12:00 a.m. to October 27, 12:00 a.m.

Special Seasons

Salmon

Youngs Bay

September 19, 12:00 a.m. to October 31, 12:00 a.m. in Area 10 of Youngs Bay.

Shad

Willamette Slough

May 15, 12:00 a.m. to June 10, 12:00 a.m. - shad only.

Columbia River (specified area)

May 26, 12:00 a.m. to June 25, 12:00 a.m. in Area 1-S of the Columbia River.

May 26, 12:00 a.m. to July 15, 12:00 a.m. in Area II-S of the Columbia River.

Shad and sturgeon only. Weekly closures were in effect.

Smelt

Saturday, 12:00 a.m. to Thursday, 12:00 a.m. - main Columbia River.

Weekly Closures (except Youngs Bay and Willamette Slough)

May 1 to August 1, Saturday (1:00 p.m.) to Sunday (7:00 p.m.) -- 30 hours.

August 2, to October 1, Friday (7:00 p.m. to Sunday (7:00 p.m.) -- 48 hours.

October 3 to October 27, Thursday (12:00 a.m.) to Monday (12:00 a.m.) -- 96 hours.

When the opening and closing date of any season indicated fell within any of the above weekly closed periods, said weekly closed period was not effective.

EXHIBIT 31

Time

Pacific Standard Time or Pacific Daylight Time were applicable where either was effective.

EXHIBIT 31
Page 8

Table 2. Summary of Troll Salmon, Tuna, and Crab Vessels Landing in Oregon Ports, 1965.

Displacement	Number of Vessels	Estimated Total Personnel
	SALMON	
5 tons and greater	409	675
Less than 5 tons	483	554
Total	892	1,229
	TUNA	
5 tons and greater	445	950
Less than 5 tons	12	16
Total	457	966
	CRAB	
5 tons and greater	118	273
Less than 5 tons	51	83
Total	169	356

EXHIBIT 31

Table 3. A Typical Distribution of the Troll Salmon Fleet by Port of Landing in Oregon.

Port	Percent of Total Vessels
Astoria	17
Tillamook	4
Depoe Bay	7
Florence	3
Coos Bay	23
Winchester Bay	4
Bandon	3
Port Orford	5
Gold Beach	1
Brookings	10
Miscellaneous	23
Total	100

Table 4. A Typical Distribution of Crab Fishing Vessels Landing in Oregon's Ports.

Port	Percent of Total Vessels
Astoria-Warrenton	25
Tillamook-Garibaldi	3
Newport-Depoe Bay	15
Reedsport-Coos Bay	29
Port Orford) Brookings) - Gold Beach)	28
Total	100

Table 5. The Number of Trawl Vessels Landing in Oregon Ports, 1966.

Port	Oregon Registered Vessels		California 3/	
	Bottomfish 1/	Shrimp 2/	Shrimp Vessels	Total
Astoria	23			23
Newport	9	1 (1) 4/	2	12 (1)
Winchester Bay	3			3
Coos Bay	2	7 (7)	1	10 (7)
Port Orford		1		1
Brookings	3	2 (2)	5	10 (2)
Total	40	11 (10)	8	59 (10)
Average Length	65 feet	55 feet	55 feet	

1/ Bottomfish trawlers averaged 120 days at sea for a total of 4,800 boat days. Vessel personnel averaged 3 persons for a total of 14,400 man days.

2/ Shrimp trawlers averaged 79 days at sea for a total of 869 boat days. Vessel personnel averaged 3 persons for a total of 2,607 man days.

3/ California shrimp trawlers averaged 79 days at sea for a total of 632 boat days. Vessel personnel averaged 3 persons for a total of 1,896 man days.

4/ Numbers in parenthesis indicate the shrimp boats that crab during the winter.

Table 6. The Number of Longline Vessels Landing in Oregon Ports, 1966.

Port	No. Vessels	Days per Trip	No. Trips	Boat Days	No. Men	Man Days
Astoria	1	10	5	50	4	200
Newport	2	6	13	78	4	312
Coos Bay	1	3	25	75	3	225
Total	4	19	43	203	11	737

Table 7. The Number of Boats Used in the Coastal Striped Bass and Shad Fishery, 1966.

River	Number of Boats	Fishing Season
Coos and Millicoma	9	April 1 - June 30
Coquille	2	April 1 - June 30
Siuslaw	3	May 15 - July 1
Umpqua	27	May 10 - Sept. 15
Smith	5	May 10 - Sept. 15
Yaquina	2	May 10 - Sept. 15
Total	48	

Table 8. The Estimated Number of Boats in the Willamette River Sport Fishery, 1966.

Week	Number of Boats
March 1 - 6	192
March 7 - 13	150
March 14 - 20	1,003
March 21 - 27	4,213
March 28 - April 3	5,662
April 4 - 10	6,847
April 11 - 17	6,467
April 18 - 24	8,493
April 25 - May 1	6,442
May 2 - 8	1,346
Total	40,815

EXHIBIT 31
Page 14

A Selected List of Oregon Fish Processors 1/

Barbey Packing Corp.	Post Office Box 63	Astoria, Oregon
Point Adams Packing Co.		Hammond, Oregon
Union Fishermen's Co-op	320 West Marine Drive	Astoria, Oregon
Bumble Bee Seafoods Div. of Castle & Cooke	Post Office Box 60	Astoria, Oregon
Gile Investment Co. (Chinook Packing Co.)		Chinook, Washington
Portland Fish Co.	301 N. W. 3rd Avenue	Portland, Oregon
San Juan Fish & Packing Co.	Post Office Box 70	Warrenton, Oregon
Astoria Seafood Co.	Post Office Box 64	Astoria, Oregon
Bandon Seafoods Co.		Bandon, Oregon
Brookings Fisheries Inc.	Post Office Box 1368	Brookings, Oregon
Cape Fisheries Inc.	210 N. Idaho St.	Port Orford, Oregon
Empire Seafood	660 S. Empire Blvd.	Coos Bay, Oregon
Eureka Fisheries	Box 456 Newmark St.	Empire, Oregon
Peterson Sea Foods Inc.	Box 429	Charleston, Oregon
Pacific Shrimp Inc.	Post Office Box 399	Warrenton, Oregon
Smith's Pacific Shrimp Co.	415 Bay Blvd., S.W.	Newport, Oregon
Bay Packers	424 California St.	North Bend, Oregon
Depoe Bay Fish Co.		Depoe Bay, Oregon
New England Fish Co.	813 S. W. Bay Blvd.	Newport, Oregn
Hoy Bros. Fish and Crab Co.		Garibaldi, Oregon
Hallmark Fisheries	Box 350	Charleston, Oregon
Fishermen's Cooperative Association		Charleston, Oregon
Astoria Fish Factors Inc.	7th Street	Astoria, Oregon

1/ One Washington based company is listed.

EXHIBIT 31
Page 15

Page 2.

Bioproducts Inc.		Warrenton, Oregon
Chas. Byer & Co.	525 S. E. Oak	Portland, Oregon
Chetco Cove Canneries		Brookings, Oregon
Edmunds Fish and Crab		Garibaldi, Oregon
Ocean Foods of Astoria	Foot of 9th	Astoria, Oregon
Pacific Fisheries	875 S. W. Bay Blvd.	Newport, Oregon
Warrenton Seafoods		Brookings, Oregon
Winchester Bay Fish Co.		Winchester Bay, Oregon
Yaquina Bay Fish Co.	367 S. W. Bay Blvd.	Newport, Oregon

EXHIBIT 32
Page 1

Commercial Fisheries
State of Washington[83]

EXHIBIT 32
Page 2

COMMERCIAL AND PERSONAL USE FISHERIES OF WASHINGTON, 1965

The 1965 commercial catch in Washington totaled 127,412,444 pounds, having a total value to the fishermen of $18,741,643 and a wholesale value of $38,478,969. The retail value was estimated at $53,870,557. Washington ranked 13th nationally in total pounds landed and 9th in total value of fisheries landed, having produced 2.6 percent of the total poundage and 4.2 percent of the total value of fish and shellfish landed in the United States.

The state salmon catch by commercial and Indian fisheries totaled 3,801,317 fish, approximately 1.5 million fish greater than the previous year. Poor pink salmon production, however, made 1965 salmon catches far lower than that which is to be expected on odd-numbered years. Returns from sport punch cards indicate an additional 939,700 salmon caught by sport anglers in fresh and salt water areas, nearly all of these being chinook and silver salmon.

The salmon pack from local fish totaled 206,285 cases, 48 lbs. per case, nearly double the low pack of 1964 but still far below average. In addition, 45,256 cases of salmon from Alaska and Canada were packed by Washington canneries. Two major tuna canning operations and several smaller plants packed the equivalent of 414,226 cases, 24 lbs. per case, of domestic and imported tuna. The canned oyster and oyster stew pack was up the equivalent of 9,000 48 lb. cases despite an over-all drop in oyster production in the state as greater proportions of the pack consisted of oyster stew. Landings of the state's second most important fishery, halibut, dropped to its lowest level since 1947. Washington landings do not reflect supply of these fish, however, since high prices predominated in all Pacific Coast ports in 1965, making the shorter trips to Alaska and Canada more favorable to the halibut fishermen.

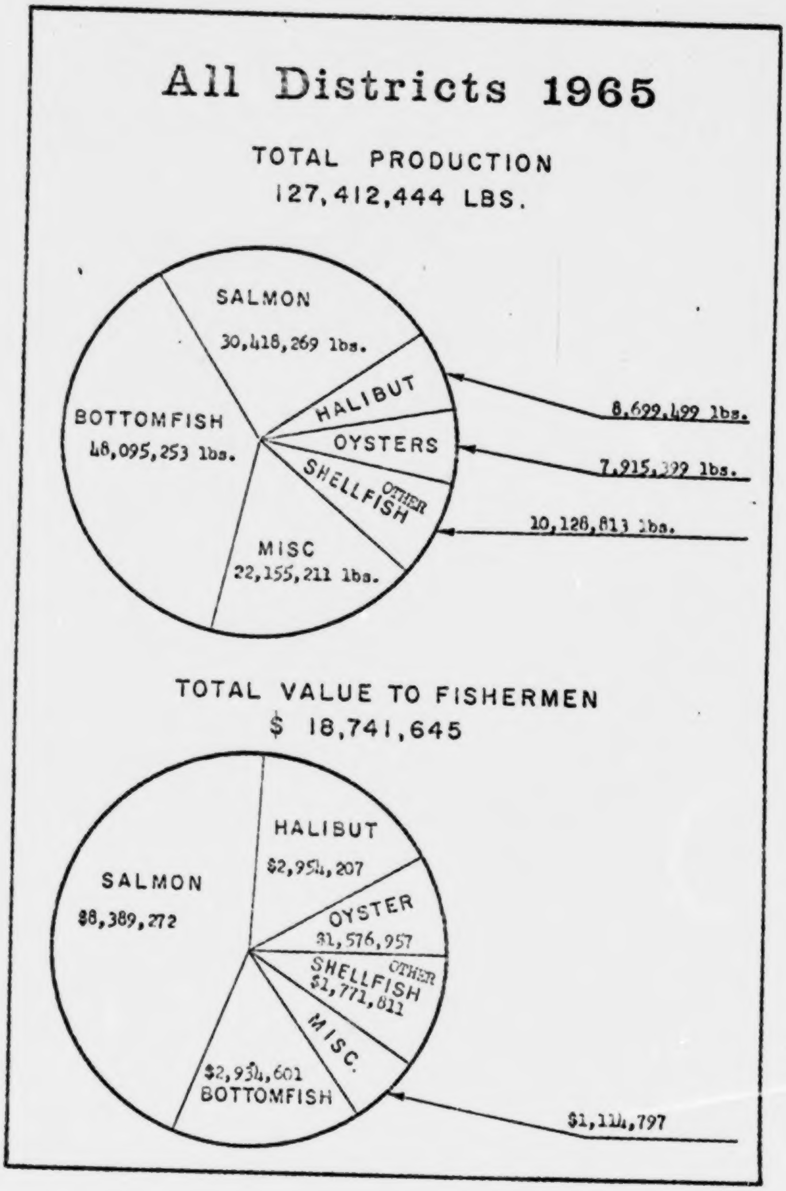
Puget Sound Salmon

The Puget Sound sockeye fishery landed 1,023,138 fish weighing 5,916,873 pounds, nearly double the number caught in 1964 and down only slightly from the 1961 catch, parent run for the 1965 sockeye. Purse seines landed 736,783 fish or 72.0% of the sockeye catch while gill nets accounted for 236,290 fish or 23.1% of the catch. Reef net sockeye amounted to 49,543 fish (4.8%).

Pink salmon landings proved to be a keen disappointment to fishermen and canners alike as for the third straight cycle, Fraser River pink salmon failed to return in substantial quantities and, unlike the 1963 run, Puget Sound pinks also failed to appear in number. As a result, very few fish were available to be caught, fishing time was severely curtailed and pink salmon landings were the lowest, for the odd-year cycle, of modern record. Commercial and Indian subsistence fisheries landed 685,386 pinks in Puget Sound ports, weighing 4,284,608 pounds. In addition, approximately 39,900 pinks were landed by sports fishermen in the Puget Sound vicinity. Purse seines landed 59.1% of these fish, gill nets 12.9%, reef nets 3.0%, while troll, Indian and sport catches made up the remainder.

Silver or coho catches proved to be the best landings of several years—highest count since 1958 and about 36,000 fish above the thirty year average. Commercial and Indian fisheries

FXHIBIT 32
Page 3



All Districts 1965

TOTAL PRODUCTION
127,412,444 LBS.

TOTAL VALUE TO FISHERMEN
$ 18,741,645

EXHIBIT 32
Page 4

landed 693,267 coho weighing 5,736,223 pounds in Puget Sound ports. An additional 149,700 coho sport catch was recorded for the same area on sport punch cards, making an all-gear total catch of 842,967 coho salmon. Of this total, trollers landings at Neah Bay, Seattle and other ports landed 34.2%, gill nets 23.7%, purse seines 16.1%, reef nets 0.5%, defineable Indian gear 7.7%, and sport gear 17.8%.

'A substantial quantity of Indian-operated gear, both gill nets, troll and purse seines, operate in the same areas, manner and times as gear operated by other citizens of the state and are not distinguishable as Indian catch. Defineable Indian catch includes only landings made on reservations or other waters reserved to exclusive Indian fisheries. Coho landings were curtailed in outer Puget Sound catch areas such as the San Juan Islands and Point Roberts by severe fishing restrictions placed in effect upon the early and late segments of the run as conservation measures designed to increase escapement of pink and chum salmon which were in critically low abundance in 1965. Coho returns to most Puget Sound streams were average or above, however the Skagit run appeared to be substandard. Landings in the southern Puget Sound region--Hood Canal, Seattle, Tacoma vicinities--were among the highest on record.

Chinook salmon landings by commercial gears totaled 123,214 fish weighing 2,334,716 pounds in Puget Sound ports. The sport chinook catch totaled 117,200 fish and constituted 48.7% of the total Puget Sound catch. Gill nets landed 29,822 fish (12.4%), purse seines 36,061 fish (15%), troll 26,917 fish (11.2%), distinguishable Indian gear 29,552 fish (12.3%), and reef nets 862 fish (0.4%). Like coho landings, chinook catches in Puget Sound were considered to be very good and in many areas were of record magnitude. The total inside Puget Sound commercial catch was 96,297 chinook, the highest total recorded since 1934, the year that traps and fixed gear were banned through Initiative action. Record or outstanding chinook landings were made from fish destined for Skagit, Samish, Lake Washington, Green, Skokomish, Stillaguamish and Deschutes River systems. The Skagit Bay commercial catch of 27,276 fish was the highest of modern record.

Chum salmon landings in 1965 were considered again to be poor, continuing a trend which has been fairly consistent for the past 13 years. 191,684 chum salmon weighing 1,797,531 pounds were landed by the commercial and Indian fisheries. Again runs returning to Fraser River and northern Puget Sound streams were near failures, necessitating almost complete closures on all fisheries dependent upon those chums. For the third consecutive year surprisingly good chum runs appeared in Hood Canal and Seattle-Tacoma waters with a result that over 86% of the total Puget Sound chum catch came from these areas.

Coastal Salmon

Gill net fisheries in Grays and Willapa Harbors seek primarily chinook, coho, and chum salmon while the major sport and commercial troll fisheries of Westport and LaPush concentrate on coho and chinook salmon with occasional incidental landings of pinks. Gill net chinook and chum landings were below 1964 levels in both Grays and Willapa Harbors with 8,900 chinook and 4,541 chums being landed by Grays Harbor gill nets and 6,397 chinook and 12,820 chums landed by Willapa fishermen. The Grays Harbor chum catch was the lowest on record while that of Willapa barely exceeded the record-low of 12,070 landed in 1963. Coastal Indian landings of chum salmon were likewise at the lowest total on record, 1,182 fish. Chinook landings were somewhat brighter even

EXHIBIT 32
Page 5

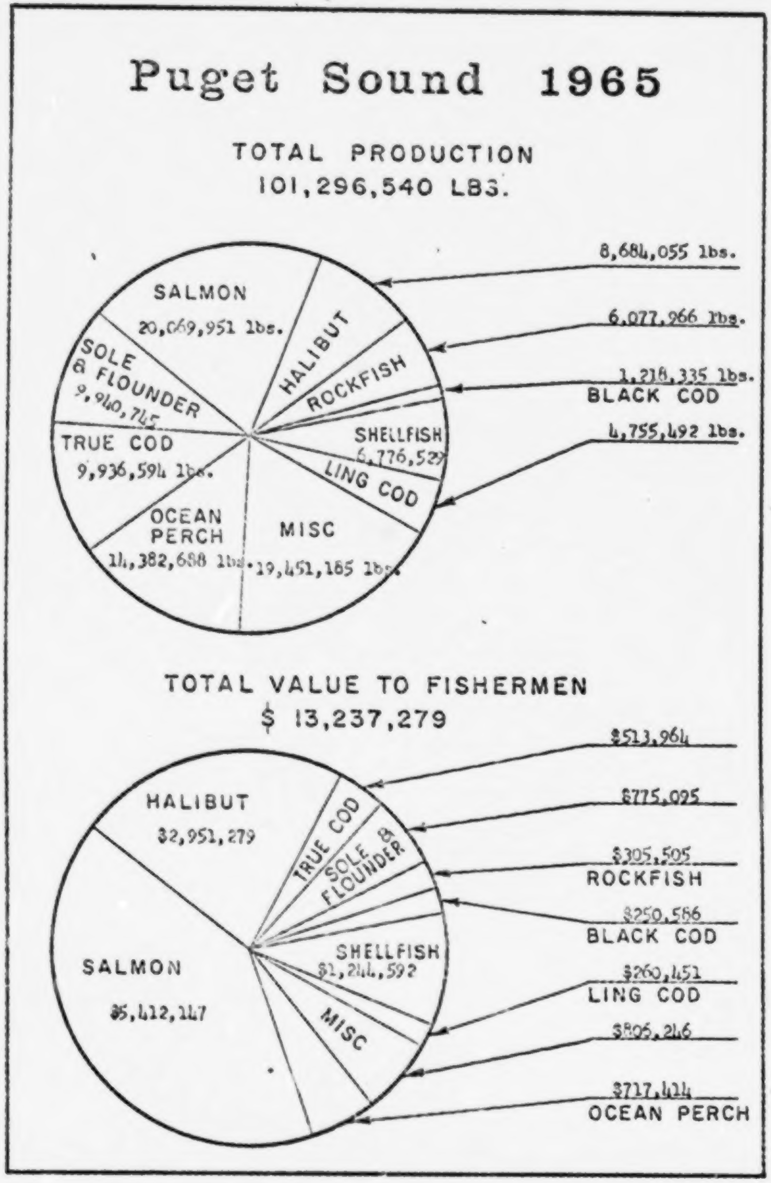


EXHIBIT 32
Page 6

if below 1964 levels. The Grays Harbor chinook catch totaled 20,159 fish, one of the best catches on record for this area. The Willapa gill net coho salmon catch totaled 12,060 fish, highest total reported from this area in nine years while Grays Harbor catches of 25,196 were slightly below 1964 levels and about 9,000 fish below 30-year averages.

Coastal sport and commercial trollers fared considerably better than did the gill net fishermen on the inner waters. The commercial troll catch of 361,562 coho from Westport and LaPush is the highest recorded catch of this species since 1952 when 454,555 coho were landed and is the second highest total catch for which we have record. A relatively poor troll chinook catch of 59,310 fish was made, poorest total since 1960 and about the sixth poorest total since 1935. Coho were so abundant in the troll fishery, however, that few fishermen were unhappy about low chinook abundance. Sport landings from Westport and LaPush totaled 74,400 chinook and 221,300 coho salmon, highest sport catches on record for this region. The incidental commercial troll pink salmon catch from Westport and LaPush totaled 41,380 fish, the third highest catch on record from this area.

COLUMBIA RIVER SALMON

The February winter season on the Columbia River begins February 15 and terminates March 1. During this fishery, Washington and Oregon gill netters landed 3,101 chinook salmon weighing 64,397 pounds. This total was approximately half the quantity landed during the exceptional February run of 1964 and is below average for the winter fishery.

The April-May segment of the spring chinook run was opened three days early on April 27 when test fishing by Fisheries agencies of Oregon and Washington indicated a run of exceptional size might be in the river. This run later proved to be exceptionally early and of average size. Spring freshets and high water interrupted salmon migration in the early part of May, necessitating a 10-day season closure to provide for adequate escapement. During the spring salmon fishing period, however, 1,455,000 pounds of chinook were taken or about 91,000 fish. The Bonneville Dam chinook count through May 31, 1965 totaled 84,259 fish, somewhat lower than desired escapement levels.

Summer Chinook

No commercial season was set for a summer season on the Columbia River in 1965, marking the first time in the commercial history of the Columbia River fishery that a season was not allowed in June and July. An Indian fishery above Bonneville Dam landed approximately 175,000 pounds chinook and 76,251 pounds of sockeye salmon. The Bonneville Dam count for June and July totaled only 75,964 chinook, of which nearly 10,000 were taken by the Indian fishery. Escapement was similar to the previous four years' escapements but still far less than the management goal of 80,000 to 90,000 upstream adults.

Fall Chinook

Oregon and Washington fishermen landed 4,510,378 pounds of fall chinook, approximately 215,541 fish, in what proved to be one of the best fall seasons for these fishermen in many years. Not since 1951 has a greater chinook poundage been taken from the Columbia and an excellent coho catch taken during the same period helped fishermen over what otherwise might have been a disastrous fishing season. Good escapements were achieved from fall run fish with an estimated 129,000 fish passing the Indian fishery above Bonneville.

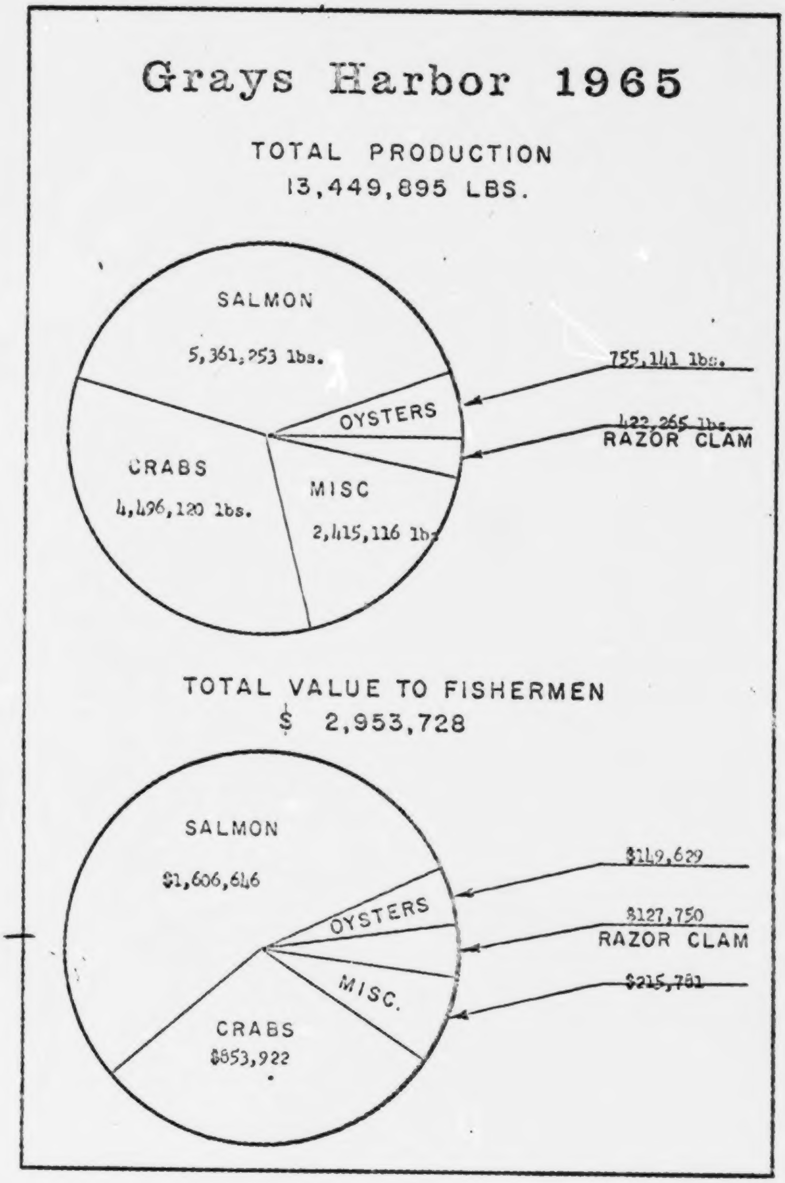

Grays Harbor 1965
TOTAL PRODUCTION
13,449,895 LBS.
SALMON
5,361,253 lbs.
OYSTERS
755,141 lbs.
422,265 lbs.
RAZOR CLAM
CRABS
4,496,120 lbs.
MISC
2,415,116 lbs
TOTAL VALUE TO FISHERMEN
$ 2,953,728
SALMON
$1,606,646
OYSTERS
$149,629
$127,750
RAZOR CLAM
$215,781
MISC.
CRABS
$853,922

EXHIBIT 32
Page 8

Coho Salmon

Because the 1965 coho or silver salmon run to the Columbia River was expected to be large, the usual two-week closure in October was eliminated and fishermen were allowed three days per week fishing time during that period. True to predictions, the run was large and 1,916,071 pounds were harvested by Oregon and Washington fishermen. This catch was just slightly below landings of 1964 but far above the average for the last ten years. Escapement to lower river hatchery ponds was good and record numbers of coho were counted over Bonneville and The Dalles Dams in 1965.

Chum Salmon

No change has been apparent in the steady decline of chum salmon in the Columbia River over the past ten years. Despite complete protection during the month of November, chums have not responded to conservation efforts and the 1965 catch, which occurred incidentally to the late coho fishery, amounted to 6,065 pounds or about 533 fish. This is the lowest catch on record for the Columbia River. Escapements were not encouraging as most streams received only light seeding from a very poor chum run.

Troll Salmon

Troll landings at Ilwaco and Chinook on the Columbia River were very good, again thanks to the excellent coho run from which Washington trollers in this vicinity took 2,286,854 pounds or approximately 304,594 fish. This catch is double the previous record high of 1,111,820 pounds set in 1964 and four times as great as the thirty year average. By contrast, the chinook catch in this area was only mediocre with landings of 108,199 pounds or 8,978 fish being brought to Columbia River ports. This catch was only about one-third the average landing for this species but with all the coho that were being caught, who was to complain? 1965 was a year for the salmon trollers in this area to look back on and remember.

Other Fish

The fish which we term "bottomfish" include the soles, flounders, rockfishes, lingcod, Pacific or true cod, sablefish and surfperches. These are primarily harvested by otter trawl although significant quantities of certain species such as lingcod and rockfish are taken by salmon trollers while sablefish are largely a target of the longline or set line fleet.

In 1965 these fishermen delivered 48,095,253 pounds of bottomfish, the greatest total production in twenty years and the second greatest on record. Over 21,000,000 pounds of this consisted of rockfish, mostly Pacific Ocean perch, while Pacific cod continued its recovery toward previous production levels with 9,959,971 pounds, highest total catch of this species since the warm waters of 1958 and 1959 drastically affected the production of this species. Among the sole production of 9,815,831 pounds, English sole leads in pounds landed with 4,490,028 pounds, nearly half of the total, while petrale sole, dover sole and rock sole trailed with 2.7 million, 1.4 million and 1.0 million pounds landed in 1965.

Fishermen landed over two million pounds of albacore in 1965, about double the landings of 1964 and second highest poundage of this species of tuna since 1950. An unusual feature of the tuna fishery was the appearance of several large tuna vessels in Washington ports discharging over 2.5 million pounds of yellowfin, skipjack and bluefin tuna, the first significant landings of these species in Washington ports by American fishermen. We have long had a tuna canning industry in this state but it has been based upon imported Japanese tuna supplemented by local albacore catches. 1965 herring

EXHIBIT 32
Page 9

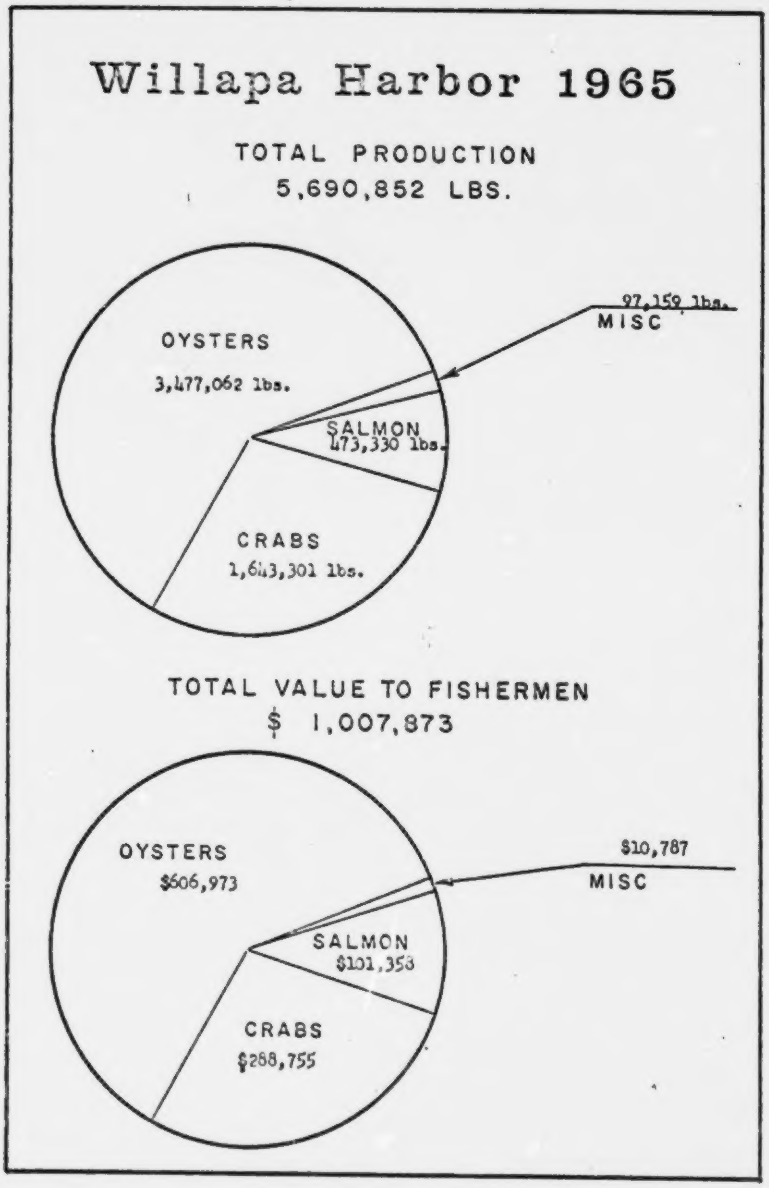


EXHIBIT 32
Page 10

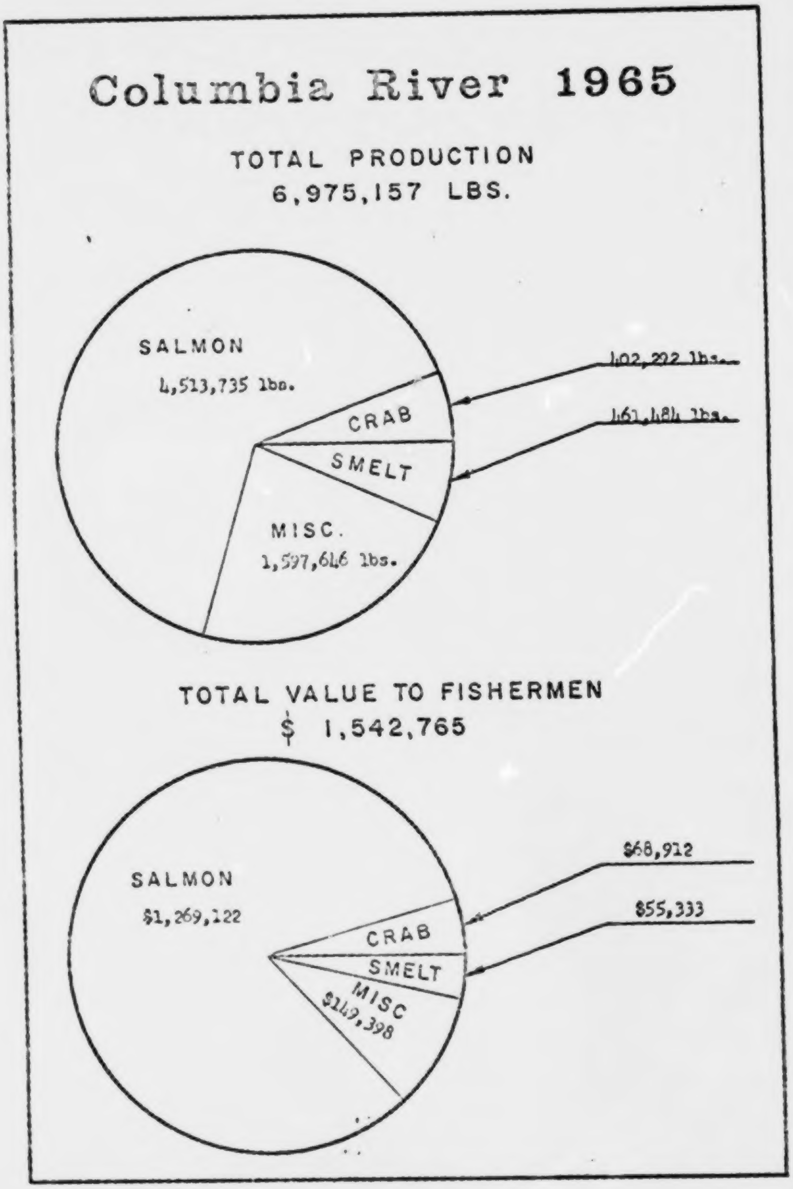


EXHIBIT 32
Page 11

landings totaled 8,330,494 pounds, topping all previous records for that species. Of this total, 717,870 pounds were taken for bait for salmon and halibut fishermen and the remainder was used either for mink food or reduction. Only a few thousand pounds of herring are processed for human consumption in Washington State. Dropping off in total production, sturgeon landings of 177,665 pounds were the poorest in eighteen years as Columbia River fishermen, hampered by lack of a summer season and restrictions on their spring season, landed only 58,000 pounds, about half their usual average. Also on the Columbia, failure of smelt to enter the Cowlitz River in 1965 produced a major drop in smelt production. A small catch was made in the Lewis River consisting of 82,025 pounds while an additional 379,459 pounds were taken in the Columbia River for a total poundage of 461,484, lowest of modern record.

Among the industrial fisheries, 1965 saw the initial exploitation of hake as an industry of its own. A total of 969,143 pounds was harvested from previously unexploited hake stocks in Port Susan and Saratoga Passage waters, a record four times as great as previous hake landings but destined to be only a fraction of the totals to be landed in future years. By June of 1966 nearly 5,000,000 pounds of hake were taken in this same fishery and elsewhere in the state, other plants were preparing to go into production promising a harvest and an industry of major proportions. The bulk of the 1965 hake catch was utilized for mink food with small amounts going to reduction plants and a minor quantity being filleted for the fresh fish market. It is anticipated that the future of the hake fishery, however, lies in reduction to fish meal or the product known as marine-protein concentrate, protein supplement projected for a human food additive, currently in the testing stages. In addition to the hake used for mink food, the animal food market was substantial enough to encourage landings of 600,000 pounds of wormy English sole, unfit for human consumption, 1.6 million pounds of mixed mink-quality fish plus large quantities of ratfish, herring, pollack, and tom cod. Industrial fish landings were nearly all up over previous years. Herring and hake have been mentioned previously as being of record magnitude. Also up were ratfish which at 1.3 million pounds were the highest since 1947. Dogfish at 1.9 million pounds exceeded any landings back to 19[illegible]. Unclassified mink food reduction fish together totaled 2.7 million pounds, a 5-year high for these landings. The year 1965 also saw the passing of the last vestige of an era, an industry which at one time ranked among the most important of Washington's fisheries. At the end of 1965, the last active purchaser of fish livers announced its intention to discontinue operations. This was an industry which flourished in the 1940's, then declined in the following decade as demand for fish livers to be processed into vitamin oils diminished. Chemicals syntheses of Vitamin A, competition from foreign fish oil producers, shutting down of the American Vitamin oil producing plants all contributed to the decline and end of an industry.

Shellfish

Pacific oyster production dropped 400,000 pounds in 1965 to 7.9 million pounds, the lowest production since 1943 as the production from Willapa Harbor dropped to a record low 396,396 pounds of oyster meats. Part of the decline was attributable to overharvest in 1964 as portions of the potential 1965 crop were opened to meet demand that year. Losses in 1964 ran very high due to tidal wave action and subsequent siltation of seed oyster beds, consequently Willapa Harbor oyster production will probably be down for several years to come. Pacific oyster production of 40,608 pounds was the highest since 1960. Landings of Dungeness crabs totaled 8,103,966 pounds, up 3.0 million pounds from 1964 levels, the highest landings of this species since 1959, and about the 9th highest on record.

Landings of coastal pink shrimp which since 1957 had formed the bulk of Washington's shrimp landings, dropped in 1965 to a token 23,468 pounds, a far cry from the 6.7 million pounds taken in 1958. Puget Sound shrimp production totaled 64,050 pounds, a figure which has been fairly consistent for several years.

Food Fish Production The Past 31 Years

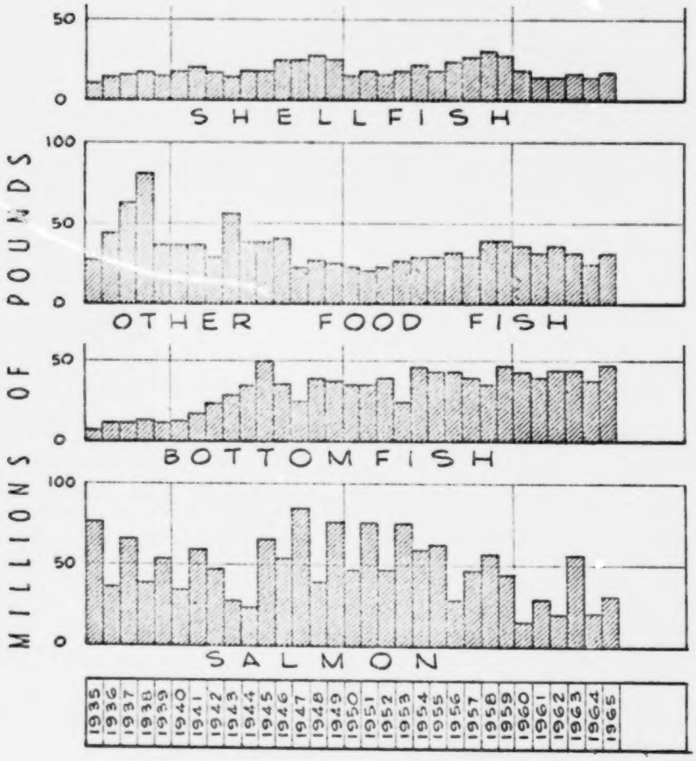
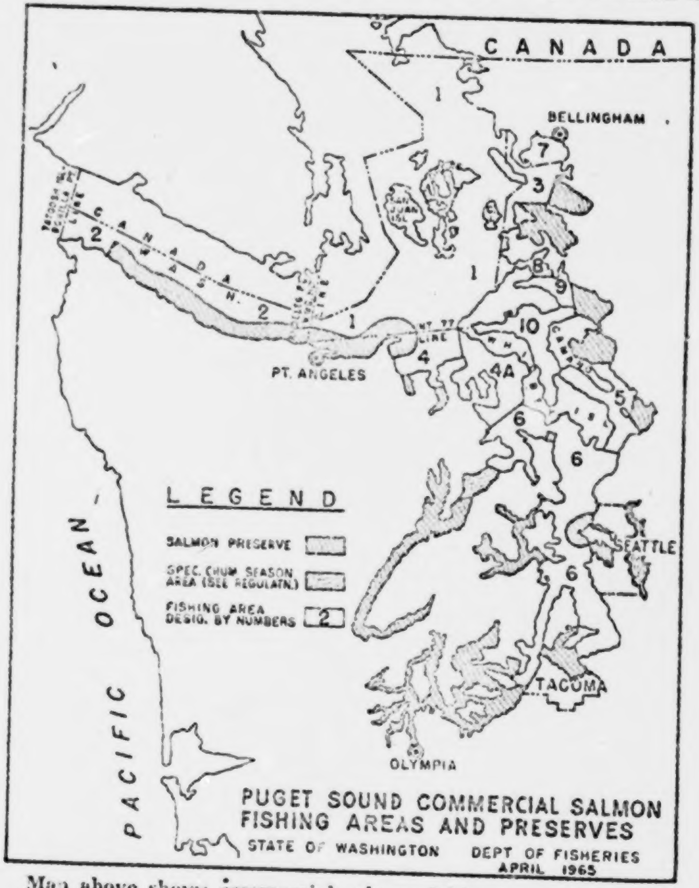


EXHIBIT 32
Page 13

1965 Puget Sound Salmon Catch by Gear① in Numbers of Fish

GEAR	Chinook	Chum	Pink	Silver	Sockeye	Total
Purse Seine	36,061	94,298	425,539	135,988	736,783	1,431,669
Gill Net	29,822	77,336	93,637	199,874	236,290	636,959
Reef Net	862	94	21,999	4,207	49,543	76,705
Other Gear②	29,552	19,956	80,002	64,991	368	194,869
Totals	96,297	191,684	621,177	405,060	1,022,984	2,340,202

① Does not include offshore troll catch. ② Indian caught fish including a small number of inside troll.


CANADA
BELLINGHAM
PT. ANGELES
SEATTLE
TACOMA
OLYMPIA
PACIFIC OCEAN
CANADA
WASH.
1
2
3
4
4A
5
6
7
8
9
10
LEGEND
SALMON PRESERVE
SPEC. CHUM SEASON AREA (SEE REGULATN.)
FISHING AREA DESIG. BY NUMBERS
PUGET SOUND COMMERCIAL SALMON FISHING AREAS AND PRESERVES
STATE OF WASHINGTON
DEPT OF FISHERIES
APRIL 1965

Map above shows commercial salmon fishing areas in Puget Sound and Strait of Juan de Fuca, along with salmon preserves.

Number of Licenses Issued by Districts

	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
PUGET SOUND																							
Purse Seine	178	88	121	167	210	255	322	317	325	278	334	310	375	211	421	*459	*428	*311	*451	*392	*436	293	*407
Gill Net	338	284	330	325	429	485	611	472	508	415	606	631	830	706	887	953	876	812	856	827	886	787	906
Reef Net	58	45	47	64	56	92	137	126	122	161	101	131	102	110	93	107	104	88	105	75	83	63	76
Personal	.....	.....	.....	.....	5,373	5,771	6,064	5,777	5,373	4,860	5,336	4,792	5,141	4,173	5,791	5,972	5,319	3,633	4,613	3,450	4,872	3,213	2,868
Boat	.....	.....	.....	.....	1,886	2,656	7,679	1,867	1,588	1,845	1,900	1,941	2,020	2,074	2,237	2,631	2,798	†347	286	162	277	213	*435
Vessel Delivery Permits	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	270	216	245	120	105	64	69	526	588	486	591	602	*1,230
Lampara	.....	.....	.....	.....	9	3	3	3	5	5	3	5	3	6	8	10	10	9	16	12	11	14	20
Bottom Fish Pot	.....	.....	.....	.....	8	2	3	2	1	1	.....	.....	.....	1	1	1	7	5	3	5	4	2	2
Troll	.....	.....	.....	.....	490	551	460	522	629	607	582	525	529	607	529	938	1,168	985	772	759	657	844	851
Troll Bottomfish	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	15	56	52	76	43	39	22
Set Net	295	737	612	653	206	183	235	60	55	47	25	28	22	5	19	31	20	13	7	4	4	5	2
Drag Seine	113	178	132	172	146	141	131	105	106	91	91	79	38	64	66	74	59	55	68	59	61	65	50
Set Line	1,471	1,701	1,221	1,272	181	113	96	36	27	23	16	15	3	4	16	19	15	10	11	8	4	12	8
Hand Line and Jigger	577	608	768	750	31	25	26	12	11	8	9	18	12	13	16	36	21	15	25	25	10	22	19
Dip Bag Net	11	18	19	26	41	36	34	29	25	24	30	20	31	39	41	48	44	29	25	26	29	25	29
Brush Weir	8	8	6	6	6	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1
Trawl eGar	145	177	170	163	104	103	84	71	79	74	66	56	38	56	51	66	57	59	57	54	57	62	52
Clam	231	263	815	915	.....	.....	.....	.....	42	48	65	68	41	66	60	81	59	70	73	70	77	77	68
Clam Farmer	39	47	38	47	38	37	49	37	30	25	42	51	47	53	48	47	39	52	48	51	43	35	36
Crab Shellfish Pots	111	178	264	335	245	209	171	154	150	164	112	91	67	61	90	74	69	89	99	109	101	110	105
Oyster Farm	.....	.....	.....	.....	59	69	133	146	79	82	116	139	96	89	81	81	84	98	92	89	78	75	63
Miscellaneous	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	.....	51	11	1
Totals‡	5,032	5,117	5,659	6,133	9,522	10,766	15,679	9,711	9,760	8,681	9,737	9,111	9,670	8,450	10,478	11,602	11,296	7,294	7,614	6,731	8,335	6,600	7,251
COLUMBIA RIVER																							
Gill Net	349	370	392	426	416	470	490	417	421	403	386	374	360	380	292	252	229	184	162	140	158	245	237
Personal	.....	.....	.....	.....	1,115	884	963	784	727	680	550	630	643	432	436	492	516	506	499	418	444	552	418
Boat	.....	.....	.....	.....	575	811	661	619	586	552	466	507	506	471	595	454	415	†53	34	50	53	63	.....
Vessel Delivery Permits	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	31	18	19	41	15	30	101	131	250	187	246	.....
Troll	.....	.....	.....	.....	78	76	95	86	56	55	60	52	41	62	45	130	95	105	84	98	172	182	172
Troll Bottomfish	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Crap Drag Seine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	10	4	2	4	2
Drag Seine	2	1	2	.....	2	4	4	3	2	3	2	2	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....
Set Line	45	56	111	150	23	30	52	.....	29	22	20	12	8	9	6	5	7	5	6	4	4	1	2
Dip Bag Net	250	281	394	157	238	228	200	46	125	179	131	111	12	72	39	100	95	101	128	119	105	82	41
Crab	.....	.....	.....	.....	5	8	1	1	2	5	15	5	10	7	16	10	13	15	17	16	10	16	18
Smelt Gill eNt	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	3	6	5	25
Miscellaneous	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Totals§	782	791	1,031	853	2,452	2,511	2,469	2,017	1,918	1,900	1,682	1,727	1,598	1,442	1,480	1,459	1,430	1,070	1,073	1,132	1,141	1,397	915

For 1947 license figures, hook and lines and troll have been separated. In the past a hook and line license was good for trolling also. Purse seine crew license was discontinued, boat license was added. Clam licenses were incorporated with personal licenses for 1947-1950. All licenses on a calendar year basis beginning January 1, 1956.

* Includes 3 purse seines for herring 1958, 1959 and 1960; 2 purse seines in 1961, 6 in 1962, 5 in 1963 and 7 in 1965. †Offshore vessels. Statute changes in 1960 combined boat and gear licenses for inside boats. ‡Includes 1 fyke net issued in 1961. §Includes 1 fyke for carp. 1965 vessel delivery and commercial delivery not listed in District only outside.

EXHIBIT 32
Page 15

Number of Licenses Issued by Districts

	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
GRAYS HARBOR																							
Gill Net	186	139	172	186	179	192	156	117	92	116	167	93	57	119	167	111	131	149	136	126	116	162	162
Personal	......	......	......	......	2,115	2,389	2,775	2,272	282	262	218	271	314	256	292	424	452	317	254	237	204	275	176
Boat	......	......	......	......	252	405	305	279	231	173	134	190	240	186	434	461	441	472	51	62	53	40	......
Vessel Delivery Permit	......	......	......	......	......	......	......	......	......	......	93	152	73	62	21	11	12	143	152	231	216	244	......
Oyster Farm	......	......	......	......	1	3	8	8	5	4	7	6	6	5	5	2	5	6	6	6	7	6	5
Troll	......	......	......	......	46	43	43	39	17	41	27	72	63	42	109	122	167	134	114	*126	171	222	262
Hand Line and Jigger	27	23	63	47	......	2	7	1	1	1	1	1	1	1	......	......	......	......	......	......	......	......	......
Drag Seine	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	2	......	......	......	......
Dip Bag Net	2	5	5	21	5	16	28	15	9	12	5	5	5	2	2	2	1	2	1	1	1	2	1
Clam	3,221	3,706	7,526	3,916	......	......	......	......	1,825	1,527	2,875	1,711	1,718	1,273	1,475	2,295	2,019	1,299	1,967	1,305	1,072	253	1,123
Crab	47	89	70	69	61	68	43	35	11	9	16	17	11	21	12	12	21	19	19	14	22	12	11
Lampara	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	2	......	......	......	......	......	1	......
Set Line	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	6	6	1	......
Miscellaneous	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	2	1
Totals①	3,479	4,168	8,973	4,791	2,773	3,103	3,279	2,853	2,403	2,141	2,304	2,384	2,523	2,609	2,456	3,351	3,179	2,143	1,974	2,322	1,972	1,226	1,482
WILLAPA HARBOR																							
Gill Net	111	149	151	261	191	175	118	137	118	131	115	126	113	147	143	169	142	151	140	119	112	82	86
Personal	......	......	......	......	1,306	1,292	605	221	254	219	227	217	194	199	297	225	181	174	191	171	172	102	62
Boat	......	......	......	......	272	304	220	198	210	161	159	197	164	188	192	148	176	122	15	11	16	13	......
Vessel Delivery Permit	......	......	......	......	......	......	......	......	......	......	43	35	5	4	3	......	......	5	7	10	12	14	......
Set Line	14	67	37	59	2	1	1	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Clam	765	1,076	2,060	2,098	......	......	......	......	......	......	9	7	13	75	14	6	2	4	2	3	4	4	3
Crab	43	52	63	90	60	86	62	35	24	21	15	33	18	39	28	22	19	29	11	18	21	20	14
Lampara	......	......	......	......	2	5	2	......	......	......	......	3	2	2	......	......	......	......	......	......	......	......	......
Oyster Farm	......	......	......	......	10	31	26	27	24	39	45	35	25	24	19	21	23	22	27	25	23	18	16
Troll	......	......	......	......	......	31	7	10	4	1	3	11	12	6	5	4	7	1	2	16	19	22	15
Clam Farm	......	......	......	......	......	......	......	......	......	......	4	2	2	5	3	1	2	4	3	2	2	2	3
Ring Net	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	2	......	......
Oyster Reserves	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	15	6	9
Clam Reserves	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	......
Totals†	959	1,253	2,469	3,037	1,814	1,919	1,261	629	671	572	619	596	549	650	612	626	549	403	431	376	259	253	208
GRAND TOTALS	16,214	11,369	18,553	15,110	16,581	18,292	22,788	15,210	14,872	13,290	15,342	14,095	14,319	12,551	15,028	17,075	16,741	10,915	11,932	10,564	2,531	9,320	10,056

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① Includes miscellaneous licenses which are no longer issued. † Offshore vessels. Statute changes in 1960 combined boat and gear licenses for inside boats. * Includes 1 troll for bottom fish.

EXHIBIT 33
Page 1

Commercial Fishing Fleet
State of Washington [40]
1959

	Puget Sound	Grays Harbor	Col. River	Willapa Harbor	Off-shore	Total
Under 5 Tons	1,513	252	359	140	32	2,296
5 - 20 Tons	745	156	77	19	71	1,068
20 - 50 Tons	371	12	4	5	79	471
50 - 100 Tons	35	---	---	---	8	43
Over 100 Tons	-----	---	---	---	--	-----
Total	2,664	420	440	164	190	3,878

EXHIBIT 34
Page 1

Federal Watercraft
Pacific Northwest 44-59
1966

EXHIBIT 34
Page 2

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
Department of the Interior					
Federal Water Pollution Control Administration, Northwest Regional Office	Puget Sound	1	Oceanographic Vessel, 45', crew 4-5, 75 boat days per year.	Head with Chlorinator	No Schedule
		1	Outboard (2-50 hp), crew-2, 45 boat days per year.	None	---
	Columbia and Willamette Rivers	1	Inboard-outboard hardtop, 20', crew-3, 60 boat days per year.	None	---
	Oregon, Washington, and Idaho Reservoirs	1	Cabin cruiser (2-50 hp), 18', crew-2, 45 boat days per year.	None	---
	Regional	1	Outboard, 16'	None	---
		2	Outboards, 14'	None	---
		1	Outboard, 12'	None	---
U. S. Geological Survey	Portland	1	Cruiser outboard 23'	None	---
		1	Fiberglass rowboat, 14'	None	---
		1	Jet-powered boat, 26', proposed in near future.	Chemical toilet may be added.	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
U. S. Bureau of Sport Fisheries & Wildlife	Pacific Northwest Region		A few outboards and many rowboats are located throughout the region.	None	---
	Juneau, Alaska	1	50'	Most larger vessels in Alaskan waters with heads; data unavailable.	
		4	Under 20'	No treatment provided.	
	Kodiak, Alaska	1	32'		
		3	Under 20'		
	Cold Bay, Alaska	2	Under 20'		
	Bethel, Alaska	1	Under 20'		
	Fairbanks, Alaska	3	Under 20'		
	Anchorage, Alaska	3	Under 20'		
	Kenai, Alaska	5	Under 20'		
U. S. Bureau of Commercial Fisheries	Pier 90, Seattle, Washington	1	Supply vessel PRIBILOF, 223', Crew-19, moored 20% of time.	None, heads not used when moored.	---
	Pier 90, Seattle, Washington	1	Research vessel GEORGE B. KELEZ, 177', Crew of 14, 5 when moored, moored 35% of time.	Holding tank.	No Schedule

Agency	Location	No.	Description	Sewage Disposal System Type	Sewage Disposal System Treatment Installation Date F. Y.
	Sand Point, Seattle, Washington	1	Research vessel JOHN N. COBB, 93', crew-4, moored 40% of time.	None, heads not used when moored.	---
	Juneau, Alaska	1	56'	Most larger vessels in Alaskan waters with heads, data unavailable.	
		2	86'	No treatment provided.	
		12	12'-24'		
	King Salmon Alaska	1	40'		
		1	24'		
		33	16'-24'		
	Kasitsna Bay, Alaska	1	38'		
		3	17'-18'		
	Olsen Bay, Alaska	1	20'		
	Ketchikan, Alaska	1	18'		
		7	14'-18'		
	Kodiak, Alaska	9	9'-18'		
	Littleport, Alaska	5	8'-20'		
	Anchorage area, Alaska	10	10'-23', river boats.		

EXHIBIT 34
Page 5

Agency	Location	No.	Description	Sewage Disposal System Type	 Treatment Installation Date F. Y.
	Brooks Lake, Alaska	3	16'-18'		
	Fairbanks, Alaska	6	12'-24'		
U. S. Bureau of Land Management	Boise, Idaho	1	Outboard, 14'	None	---
Department of Defense					
U. S. Army Corps of Engineers	Portland District	1	Hopper Dredge BIDDLE, 352', crew-82.	Aerobic	1968
		1	Hopper Dredge HARDING, 308', crew-68.	Aerobic	1968
		1	Hopper Dredge DAVISON, 216', crew-48.	Aerobic	1968
		1	Hopper Dredge PACIFIC, 180', crew-43.	Aerobic	1968
		1	Pipeline Dredge MULTNOMAH, 197', crew-54.	Maceration-Chlorination	1968
		1	Pipeline Dredge WAHKIAKUM, 188', crew-44.		1967
		1	Pipeline Dredge LUCKIAMUTE, 145', crew-24.	Electric	1967
		1	Booster Barge BAXTER, 141', crew-7.	Electric	1967

Agency	Location	No.	Description	Sewage Disposal System Type	Treatment Installation Date F. Y.
		1	Surveyboat NORMAN BRAY, 53', crew-8.	Maceration-Chlorination (Packaged unit).	1967
		1	Tug HULD, 45', crew-2.	Maceration-Chlorination (Packaged unit).	1967
		1	Tug OJA, 45', crew-2.	Maceration-Chlorination (Packaged unit).	1967
		1	Launch JOHN MILLER, 52', crew-3.	Maceration-Chlorination (Packaged unit).	1967
	Walla Walla District	1	LCM-6, Landing Craft, 45', Ice Harbor Project.	None	---
		1	Converted Poontoon, 30', Lucky Peak Project.	None	---
		1	Work boat, wood, 24', crew 2-3, water control.	Head, no treatment.	No Schedule
		1	Bi-hull, 20', John Day Project.	None	---
		1	Turbo-jet aluminum, 19', Survey Section.	None	---
		1	Crestliner, aluminum, 18', John Day Project.	None	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
		1	Crestliner, aluminum, 18', Res. Mgmt.	None	---
		2	Turbo-jet 55, glass, 18', Res. Mgmt.	None	---
		1	Starcraft, 18', McNary Project.	None	---
		2	Turbo-jet, 18', Survey Section.	None	---
		1	"Queen-Marrie", aluminum, 18', Ice Harbor Project.	None	---
		1	Utility, Skagit, 17', glass, Lower Granite Project.	None	---
		1	Seasled, wood, 17', Water Control.	None	---
		1	Utility, Skagit, 17', glass, Lucky Peak Project.	None	---
		1	Starcraft, aluminum, 16½', Water Control.	None	---
		2	Wizard, 14', Survey Section.	None	---
		1	Bellboy "Cartopper", 11', Survey Section.	None	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
		1	Rowboat, wood, 8', Res. Mgmt.	None	---
		3	Other small boats.	None	---
	Seattle District	1	Snagboat PRESTON, crew-14.	Central Maceration and Chlorination.	No Schedule
		1	Surveyboat MAMALA, crew-8.	Maceration-Chlorination Package Plant.	No Schedule
		1	Surveyboat DAVIES, crew-5	Maceration-Chlorination Package Plant.	No Schedule
		1	Derrick Barge No. 1, crew-4.	Maceration-Chlorination Package Plant.	No Schedule
U. S. Navy, Thirteenth Naval District	Tacoma, Washington	1	Destroyer, crew-100.	None	---
	Seattle, Washington	2	Destroyer escort, crew-40 each.	None	---
	Puget Sound Area, Washington	1	Tug, crew-45, occasionally in area.	None	---
		1	Submarine, crew-60, occasionally in area.	None	---
		1	Transport, crew-350, occasionally in area.	None	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
	Adak, Alaska	1	200', crew-90.	Most larger vessels in Alaskan waters with heads; data unavailable. No treatment provided.	
	Kodiak, Alaska	1	133', crew-22.		
	Kodiak, Alaska	2	100', crew-8 each.		
	Adak, Alaska	1	100', crew-6		
	Kodiak, Alaska	1	40', crew-5		
	Kodiak, Alaska	1	35', crew-5		
Department of Commerce					
U. S. Coast and Geodetic Survey	Lake Union, Seattle, Washington	1	SURVEYOR, 292', crew-91, moored 25% of time.	Holding Tank.	No Schedule
		1	PATHFINDER, 229' crew-84, moored 25% of time.	None	---
		1	HODGSON, 140', crew-28 at sea, 20 when moored, moored 50% of time.	None	---
		1	BOWIE, 140', crew-28 at sea, 20 when moored, moored 50% of time.	None	---
		1	PATTON, 90', crew-15 at sea, 11 when moored, moored 50% of time.	None	---

Agency	Location	No.	Description	Sewage Disposal System Type	Treatment Installation Date F. Y.
		1	LESTER JONES, 90', crew-15 at sea, 11 when moored, moored 50% of time.	None	---
	Alaskan Waters	1	292', crew-100, May-Oct., 1967.	Most larger vessels in Alaskan waters with heads; data unavailable. No treatment available.	
		1	229', crew-98 May-Oct., 1967.		
		2	88', crew-15 each, April-Sept., 1967.		
U.S. Maritime Administration	Olympia, Washington	117	Moth-ball fleet, 32 persons.	Privies, Chlorination	---
		1	Work barge, crew-5.	Head	---
		1	Supply barge.	None	---
		1	Crane barge.	None	---
		2	Tugs, 120', 4 hours use every two weeks.	Head	---
		2	Patrol boat, 45' crew-2.	None	---
		1	Small launch.	None	---
		Several	Painting barges.	None	---
	Astoria, Oregon	66	Mothball fleet, 32 persons.	Privies	---

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				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
		1	Work barge, crew-7.	Head	---
		2	Tugs, large.	Head	---
		2	Patrol boat, 45'.	None	---
Department of Agriculture					
U. S. Forest Service	Palisades Reservoirs, Idaho	1	Pootoon, 25'.	None	---
	Arrowrock Reservoir, Idaho	1	Outboard, 16'.	None	---
	Redfish Lake, Idaho	1	Outboard, 16'.	None	---
	Stanley Lake, Idaho	1	Outboard, 14'.	None	---
	Deadwood Reservoir, Idaho	1	Outboard, 14'.	None	---
	Oregon, Western Washington	24		None	---
	Sitka, Alaska	1	61'.	Most larger vessels in Alaskan waters with heads; data unavailable. No treatment provided.	
		7	13'-19'.		
	Petersburg, Alaska	1	60'.		

Agency	Location	No.	Description	Sewage Disposal System Type	Sewage Disposal System Treatment Installation Date F. Y.
		9	13'-24'.		
	Chatham, Alaska	1	61'.		
		2	16'-18'.		
		3	Houseboats, 15'x52', in summer.		
	Wrangell, Alaska	1	22'.		
	Kassan, Alaska	3	13'.		
	Anchorage, Alaska	1	16'.		
	Kenai, Alaska	3	13'-17'.		
	Craig, Alaska	3	13'-23'.		
	Ketchikan, Alaska	2	13'-17'.		
	Cordova, Alaska	1	21'.		
	Juneau, Alaska	3	13'-17'.		
U.S. Treasury Department					
U. S. Coast Guard, Thirteenth District	Seattle, Washington	1	CGC NORTHWIND, 269', crew-199.	Head	---
		1	CGC STATEN ISLAND, 269', crew-199.	Head	---
		1	CGC KLAMATH, 255', crew-143.	Head	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
		1	CGC WACHUSETT, 255', crew-143.	Head	---
	Port Angeles, Washington	1	CGC WINONA, 255', crew-143.	Head	---
	Astoria, Oregon	1	CGC YOCONA, 213', crew-76.	Head	---
		1	CGC IVY, 189', crew-53.	Head	---
		1	CGC MAGNOLIA, 189', crew-53.	Head	---
	Seattle, Washington	1	CGC FIR, 174', crew-38.	Head	---
	Coos Bay, Oregon	1	CGC MODOC, 143', crew-47.	Head	---
	Astoria, Oregon	1	CGC WHITEBUSH, 133', crew-21.	Head	---
	Vancouver, Washington	1	CGC BLUEBELL, 100', crew-13.	Head	---
	Seattle, Washington	1	COLUMBIA LIGHTSHIP, 128', crew-17.	Head	---
		1	UMATILLA LIGHTSHIP, 128', crew-17.	Head	---
		1	RELIEF LIGHTSHIP, 133', crew-17.	Head	---
	Port Angeles, Washington	1	CGC CAPE HENLOPEN, 95', crew-14.	Head	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
	Anacortes, Washington	1	CGC CAPE FLORIDA, 95', crew-14.	Head	---
	Bellingham, Washington	1	CGC POINT COUNTESS, 82', crew-8.	Head	---
	Port Townsend, Washington	1	CGC POINT BENNETT, 82', crew-8.	Head with treatment.	No Schedule
	Kennewick, Washington	1	CGC BLUEBERRY, 65', crew-5.	Head	---
	Bellingham, Washington	1	Tug #65613, 65', crew-5.	Head with treatment.	No Schedule
	Washington and Oregon	1	Barge, 60'.	None	---
		1	Landing craft, 50'.	None	---
		4	Motor life boat, 52'.	Heads	---
		3	Buoy boat, 45'.	1 with head.	---
		11	Motor life boat, 44'.	Heads, Maceration-Chlorination.	No Schedule
		16	Utility boat, 40'.	10 with heads.	---
		14	Motor life boat, 36'.	1 with head.	---
		3	Utility boat, 30'.	None	---
		1	Monomoy surf-boat, 26'.	None	---

Agency	Location	No.	Description	Sewage Disposal System Type	Treatment Installation Date F. Y.
		1	Motor surfboat, 25'.	None	---
		1	Motor launch, cabin, 25'.	None	---
		1	Motor cargo boat, 24'.	None	---
		2	Motor rescue boat, 22'.	None	---
		1	Dinghy, 20'.	None	---
		4	Trailerable boat, 19'.	None	---
		1	Motor launch, 18'.	None	---
		1	Utility motor launch, 17'.	None	---
		10	Outboard motor boat, 16'.	None	---
		9	Flood relief punt, 16'.	None	---
		1	Punt, 16'.	None	---
		5	Dinghy, 16'.	None	---
		1	Dinghy, 15'.	None	---
		1	Seasled, 15'.	None	---
		24	Skiff, 14'.	None	---
		2	Utility Skiff, 14'.	None	---
		3	Dinghy, 10'.	None	---

Agency	Location	No.	Description	Sewage Disposal System	
				Type	Treatment Installation Date F. Y.
	On board vessels 65' and larger.	2	Landing craft, 35'.	None	---
		4	Monomoy surfboat, 26'.	None	---
		12	Motor surfboat, 25'.	None	---
		6	Motor surfboat, 24'.	None	---
		1	Dinghy, 20'.	None	---
		4	Motor launch, 18'.	None	---
		1	Motor launch, 16'.	None	---
		2	Punt, 16'.	None	---
		2	Skiff, 14'.	None	---
		3	Utility skiff, 14'.	None	---
		1	Ice skiff, 14'.	None	---
		1	Dinghy, 10'.	None	---
U.S. Coast Guard Seventeenth District	Kodiak, Alaska	1	230', crew-97.	Most larger vessels in Alaskan waters with heads; data unavailable.	
	Kodiak, Alaska	1	210', crew-67.	No treatment provided.	
	Adak, Alaska	1	180', crew-52.		
	Ketchikan, Alaska	1	180', crew-57.		
	Kodiak, Alaska	1	180', crew-48.		

Agency	Location	No.	Description	Sewage Disposal System Type	Sewage Disposal System Treatment Installation Date F. Y.
	Cordova, Alaska	1	180', crew-57.		
	Seward, Alaska	1	180', crew-52.		
	Juneau, Alaska	1	180', crew-52.		
	Ketchikan, Alaska	1	133', crew-28.		
	Juneau, Alaska	1	95', crew-15.		
	Ketchikan, Alaska	1	95', crew-18.		
	Petersburg, Alaska	1	65', crew-7.		
	Ketchikan, Alaska	1	44', crew-3.		
	Juneau, Alaska	1	40', crew-3.		
	Ketchikan, Alaska	1	30', crew-3.		

EXHIBIT 35
Page 1

State Watercraft
Pacific Northwest 60-65
(Excluding Oregon)
1966

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
Department of Fish & Game		State of Alaska		Most larger vessels in Alaskan waters with heads; data unavailable. No treatment provided.	
	Kodiak, Alaska	1	KITTIWAKE 72', crew-3, berths-8		
	Ketchikan, Alaska	1	GRIZZLEY BEAR 58', crew-1, berths-8		
	Juneau, Alaska	1	AUKLET, 57', crew-1,berths-6		
	Petersburg, Alaska	1	HARLEQUIN, 50', crew-1, berths-4		
	Cordova, Alaska	1	SHAD, 44', crew-1, berths-4		
	Sitka, Alaska	1	GRAYLING, 38', crew-1, berths-4		
	Petersburg, Alaska	1	SHEARWATER, 36', crew-0, berths-3		
	Homer, Alaska	1	CUTTHROAT, 34', crew-0, berths-2		
	Wrangell, Alaska	1	TERN, 32', crew-0, berths-2		
	Kodiak, Alaska	1	SMOLT, 32',crew-0, berths-4		
	Juneau, Alaska	1	BRANT, 32', crew-1		
	King Salmon, Alaska	1	PUFFIN, 32', crew-0, berths-2		
	King Salmon, Alaska	1	JAEGER, 32', crew-0, berths-2		

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
	Juneau, Alaska	1	O. KISUTCH, 31', crew-0, berths-2, stored subport building		
	Juneau, Alaska	1	CLUPEA, 31', crew-0, berths-2, stored subport building		
	Cordova, Alaska	1	GOOSE, 30', crew-2, berths-4		
	Juneau, Alaska	1	FALCON, 17'		
	Juneau, Alaska	3	Surplus boats		
	King Salmon, Alaska	2	Surplus boats		
		State of Idaho			
Various sheriffs offices	Idaho	40		none	---
Fish & Game Department, Department of Law Enforcement		53		none	---
		State of Washington			
Department of Game		114	Also includes 149 outboard motors & 83 boat trailers	none	---
Parks & Recreation Department		5		none	---
Department of Fisheries					
Patrol Division		10	outboards	none	---

				Sewage Disposal System	
Agency	Location	No.	Description	Type	Treatment Installation Date F. Y.
	Salmon Bay	1	Pelican, 80'	2 heads	---
	Bellingham, Washington	1	Patrol Boat #1, 36'	head	---
	Everett, Anacortes, Tacoma	3	Patrol Boats, 32-42'	none	---
		1	Patrol Boat #3, 20'	none	---
Research Division	Puget Sound, Washington	12	Outboards, 12-17'	none	---
		2	Inboard-outboards-17'	none	---
	Willipa Bay, Washington	2	Outboards - 12-17'	none	---
		1	Inboard-30'	head	---
Washington State Ferries Fleet	Puget Sound Area, Wash.	1	CHETZEMOKA, 240'	3 heads	---
		1	CROSLINE, 150'	3 heads	---
		1	ENTAI, 256'	2 heads	---
		1	EVERGREEN STATE, 310'	6 heads	---
		1	ILLAHEE, 256'	2 heads	---
		1	KALA-KALA, 276'	3 heads	---
		1	KEHLOKEN, 239'	3 heads	---
		1	KLAHANIC, 240'	3 heads	---

Agency	Location	No.	Description	Sewage Disposal System Type	Treatment Installation Date F. Y.
		1	KLAHOWYA, 310'	6 heads	---
		1	KLICKITAT, 256'	2 heads	---
		1	LESCHI, 169'	2 heads	---
		1	NISQUALLY, 256'	3 heads	---
		1	OLYMPIC, 207'	4 heads	---
		1	QUINALT, 256'	3 heads	---
		1	RHODODENDRON	4 heads	---
		1	SAN MATEO, 230'	2 heads	---
		1	SKANSONIA, 164'	2 heads	---
		1	TILLIKUM, 310'	6 heads	---
		1	VASHON, 200'	2 heads	---
		1	WILLAPA, 256'	2 heads	---

EXHIBIT 36
Page 1

Supporting Shore Facilities
for
Washington State Ferries
State of Washington [84]

Terminal	Facilities at Terminal	Waste to City Sewers	Waste to Treatment Systems (Holding Tank & Chlorination
1 Anacortes	X		X
2 Lopez Island	X		
3 Shaw			
4 Orcas	X		
5 Friday Harbor	X		
6 Sidney, British Columbia	X		
7 Everett	X	X	
8 Columbia Beach	X		X
9 Edmonds	X		X
10 Kingston	X		X
11 Seattle	X	X	
12 Winslow	X	X	
13 Bremerton	X	X	
14 Fauntleroy	X		X
15 Vashan	X		X
16 Southworth	X		X
17 Tahlequah			
18 Tacoma Pt. Defiance	X		

EXHIBIT 37
Page 1

State of Montana

State Board of Health

JOHN S. ANDERSON, M.D.
EXECUTIVE OFFICER AND SECRETARY

HELENA, MONTANA

December 23, 1966

Rcvd
12-27-66

Mr. Donald J. Hernandez, Chief
Water Supply Activities
Federal Water Pollution Control Administration
200 South 35th Street
Corvallis, Oregon 97330

Dear Mr. Hernandez:

Mr. Boydston has transmitted your letter of December 21 in which you tell of your plans to study pollution from water craft.

Water pollution is a responsibility of this office; however, it was recognized that we could not control water craft pollution with our present staff. Therefore, the last legislature modified the present boating laws which require licensing by the State Board of Equalization, saying that water craft with toilet facilities must follow regulations established by the State Board of Health. If these regulations are not followed, then the license can be denied. The checking of these licenses is handled by the State Fish and Game wardens.

It is now required that any boat using Montana waters must be equipped with a holding tank, and the contents pumped at a marina with suitable sewage disposal facilities. Otherwise, the boat must have equipment adequate to provide the equivalent of secondary treatment. We do not consider maceration and disinfection as suitable treatment.

Before this law was passed, we had had some indications of an increase in coliform in a few of the bays on Flathead Lake. We have had no reports of this lately. We do not know whether the pollution was due to boats or due to some shore activities.

We believe that the present law is very tight and do not expect difficulties in this area.

We hope this gives you the information which you desire. We do question justification for any trip, as all that was desired was to be informed on pollution from water craft.

EXHIBIT 37
Page 2

Mr. Donald J. Hernandez
Page 2
December 23, 1966

With best wishes for the Holiday Season,

Yours very truly,

Claiborne W. Brinck

Claiborne W. Brinck, Director
Division of Environmental Sanitation

CWB:slj

EXHIBIT 38
Page 1

Marion County Sheriff's Office

THOMAS E. BACHELDER
Sheriff and Tax Collector

Court House
Salem, Oregon
Phone 364-4401, Ext. 31

January 6, 1967

Mr. B. David Clark
Pacific N. W. Water Laboratory
200 S. 35th Street
Corvallis, Oregon

Dear Sir:

As a result of our conversation on January 4, 1967, I am taking this opportunity to furnish you with what little information we have concerning water pollution as a result of boating activities. As I mentioned to you, this information is a result of personal observation over a period of several years during which I have been active in scuba diving, boating, and other water sports as a hobby, and in my official capacity as a law enforcement officer.

As a scuba diver, I have had occasion to observe conditions in many lakes and streams; in my several years of experience I cannot recall one instance where I did not see evidence of pollution. This pollution, particularly in the lakes, I attribute almost entirely to boaters. In some lakes the bottom bears a marked resemblance to a garbage dump. The only thing absent is the unpleasant odor. This is particularly true around moorages or popular fishing spots. The list of items thrown into the water by boaters is endless. Such items as beer cans, soft drink cans, and other empty containers are so common that I would be very surprised if I did not see them.

In my opinion the outboard motor does contribute to pollution. I have dived in lakes where the use of motors is prohibited, and in comparing these lakes with those where motors are used, the clarity of the water is noticeably different. This is particularly evident in the smaller lakes. The outboard motor is certainly not the only factor controlling the clarity of water; however, marked difference in lakes where motors are used and in lakes where motors are not used certainly indicate that the motors do contribute to pollution.

As I mentioned, I have observed pollution in every lake dived in, even those high lakes not accessible by road. One of the worst of there is Marion Lake, which is three miles from the nearest road. The bottom of this lake is littered with garbage. Other lakes where these conditions exist are: Olallie, Breitenbush, Elk, Dunlap, Detroit Reservoir, Clackamas Reservoir, and many others.

EXHIBIT 38
Page 2

Some rivers are worse than the lakes. How much pollution of rivers can be attributed to boaters is unknown; however, I believe boaters do appreciably contribute to the filth in our rivers.

In my official capacity I have control over the Marion Enforcement Division of the Underwater Search Unit of the Marion County Sheriff's Office. We maintain patrol boats all during the boating season, and are called upon many times to make an underwater search for drowned persons, or lost articles. Pollution of lakes and streams is rapidly reaching the point that it hampers the activities of these units. For instance, there are some portions of the Willamette River that due to extreme health hazards; we will not permit our divers to operate. Prior to the time we prohibited diving in those areas, we have had several cases of infection as a result of operations there. The Willamette River is so polluted that visibility under water is usually one or two inches, and at best, is 10 or 12 inches.

I am truly sorry that we have not documented this unnecessary litter of our water ways. I think that a few photographs of piles of beer cans, boxes of garbage, and other trash lying on the bottom of our lakes would do much to illustrate this problem.

I would be most happy to assist you in any way that I can. During the boating season, I will instruct our divers to take special note of polluted conditions, and in some instances will have photographs taken.

Please do not hesitate to call on me if I can be of any further assistance.

Very truly yours,

John L. Wilkerson
Lieutenant

JLW:am

EXHIBIT 39
Page 1

(Proposed Study)
Bacteriological and Esthetic Effects of Pleasure Boat Waste Discharge on Small Harbors
University of Washington
Seattle, Washington [85]

II. a) The objective of the proposed study will be to determine and document the pollution problem caused by the waste discharge from small pleasure craft in two small harbors in the State of Washington. It will concern the influence these sewage discharges have on the bacteriological and esthetic water quality of these harbors. Two small bays close to the University of Washington campus will be studied. The first one, Meydenbauer Bay, a small inlet on the east shore of Lake Washington near Bellevue, will provide data concerning the resultant bacterial contamination in fresh water. The second, Wollochet Bay near Tacoma, a small sheltered harbor in southern Puget Sound, will give information on the pollutional effects in salt water. These harbors were selected for the following reasons:

a. Both are known to be relatively free of external sources of pollution.

b. Both are consistently and heavily used by pleasure craft as overnight moorages on summer weekends.

c. Both receive relatively little use as moorages during the winter months.

d. Both may be easily sampled from a small boat.

Sampling points will be selected in these harbors to adequately reveal the bacteriological quality of the water. Samples for bacteriological analysis will be collected at various depths using a bacteriological sampler. The bacteriological analysis will be by the membrane filter technique to determine and enumerate the presence of coliform organisms. The examination of the water samples will be initiated in the field immediately after collection. In addition, visual surveillances will be made to detect and record the presence of floating solids and other debris of boat origin. A boat census will be made on each sampling trip. The frequency of sampling will be established so as to take into account such factors as dilution, mixing, tidal movements, the frequency and rate of boat waste discharge, along with weekly and seasonal fluctuations in boat populations.

b) The normal procedure aboard small craft is to directly discharge sewage and galley waste and anything else that will go through the head into the water wherever the boat happens to be, either underway or at anchor. Garbage is usually retained on board for subsequent disposal on shore. While on the other hand, shore inhabitants along most bodies of water generally are required to take precautions to prevent direct sewage discharge into these waters. The present dual pollution control regulations, one for shore dwellers and another for boat inhabitants, is, of course, inconsistent and subject to challenge.

The feces and other body wastes so discharged from pleasure craft are fresh and if they contain pathogenic organisms they represent a potential hazard to subsequent users of the water. The presence of fecal matter and toilet paper, of course, always constitutes an esthetic degradation of water quality.

c) A recent conference of the National Sanitation Foundation focused national attention to this problem. In this meeting, it was brought out " . . . That public health and water pollution control officials long have known of the potential hazards inherent in the uncontrolled discharge of wastes from boats, including pleasure craft, on both inland and coastal waters. But, because the degree of pollution and the threat of infectious disease dissemination had not been documented precisely, boating interests have been prone to discount the problem. However, with the tremendous increase in the number of boat users in recent years, coincident with the increase of the population and leisure hours at their disposal, evidence has been accumulating that municipal water intakes are in danger, shellfish beds are threatened, and once favored beaches are being rendered potentially unsafe for swimming and recreation."

The shoreline around each of these harbors is lined with waterfront homes and lends itself to recreational usage in the form of water contact activities. During the summer months the shorelines and waters of these bays are used extensively for swimming, wading, water skiing, boating, etc.

d) The Science Information Exchange does not list any current projects directly related to this problem. They did list one study that is remotely related and is being made by the Research Foundation of the University of Toledo entitled "Effect of Aeration Upon Small Marinas" which is described as a general study of pollution in the Toledo area. It is known, however, that the Federal Water Pollution Control Administration has initiated a project to study vessel waste disposal in San Diego Bay. Such a study was recommended by the President's Water Pollution Control Advisory Board, since little information is available on the effects of untreated vessel wastes on the receiving waters and no practical solutions to the problem have been devised. While the Navy is concerned about overboard disposal of sewage, before they will provide waste treatment systems for their ships, the pollutional effects of these wastes in otherwise unpolluted waters must be defined.

EXHIBIT 40
Page 1

Oil Pollution Investigations
Navigable Waters of the Pacific Northwest[86]
(Excluding Alaska)
January 1965 - December 1966

Date of Pollution	January 1965	January 1965	January 1965
Name of Vessel	TRBOVLJE	IRISH ROWAN	CALIFORNIA MAIL
Nationality	Yugoslav	Irish	American
Place of Occurrence	Terminal 1, Berth 6, Portland, Oregon	Commission of Public Docks, Portland, Oregon	Crown Mills Dock Portland, Oregon
What type of Refuse if Refuse Act.			

Date of Pollution	February 1965	February 1965	January 1965
Name of Vessel		TIDECREST	SEAMAR
Nationality		Brazil	American
Place of Occurrence	Eagle Harbor Winslow, Washington	Terminal 1, Berth 1, Portland, Oregon	Portland Dry Dock Portland, Oregon
What type of Refuse if Refuse Act.	Pile Ends		

Date of Pollution	March 1965	February 1965	March 1965
Name of Vessel	TAYBANK	DONA NATI	MARIPRIMA
Nationality	British	Philippine Islands	Liberian
Place of Occurrence	Terminal 4, Berth 2, Portland, Oregon	Terminal 4, Berth 1, Portland, Oregon	Terminal 4, Berth 1, Portland, Oregon
What type of Refuse if Refuse Act.			

EXHIBIT 40
Page 2

Date of Pollution	March 1965	April 1965	April 1965
Name of Vessel	STEEL MAKER	MORMACMAR	SILVER SHELTON
Nationality	American	American	Liberia
Place of Occurrence	Westport, Oregon	Terminal 1, Berth 2, Portland, Oregon	Pier 7 Water Way, Tacoma, Washington
What type of Refuse if Refuse Act.			

Date of Pollution	May 1965	June 1965	June 1965
Name of Vessel		COASTAL MONARCH	Derrick No. 6 Manson Construction Co.
Nationality		American	American
Place of Occurrence	Mouth of Cedar River, (Seattle, Washington)	Pier 69, Seattle, Washington	Mathews Beach, Seattle, Washington
What type of Refuse if Refuse Act.	Bunker Sea Fuel		

Date of Pollution	June 1965	May 1965	August 1965
Name of Vessel	MARGARET E		USS MCGINTY
Nationality	American		American (Federal)
Place of Occurrence	Salmon Harbor, Winchester Bay, Oregon	Pier 20, Seattle, Washington	Swan Island Lagoon, Portland, Oregon
What type of Refuse		20% waste Sodium Cyanide 80% Solvent	

Date of Pollution	June 1965 a	June 1965	August 1965
Name of Vessel			VANCOUVER Tug & Barge No. 65
Nationality	American (Federal)		Canada
Place of Occurrence	Puget Sound Navy Yard Bremerton, Washington	Suldan's Boat Works, Seattle, Washington	Cherry Point Beach, Seattle, Washington
What type of Refuse if Refuse Act.		Oil	

Date of Pollution	September 1965	September 1965	September 1965
Name of Vessel		SHOYO MARU	THISTLEDOWNE
Nationality		Japanese	British
Place of Occurrence	Yaquina River, Toledo, Oregon	Commission of Public Docks, Portland, Oregon	Terminal 1, Berth 8, Portland, Oregon
What type of Refuse if Refuse Act.	Bunker C		

Date of Pollution	February 1966	February 1966	April 1966 a
Name of Vessel	NEW XELAND VICTORY	BEATRICE	
Nationality	American	Liberian	American (Federal)
Place of Occurrence	Swan Island Basin, Portland, Oregon	Peavy Grain Dock Portland, Oregon	Olympia, Washington
What type of Refuse if Refuse Act.			Residue from painting Reserve Fleet

EXHIBIT 40
Page 3

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a Information obtained from Washington Pollution Control Commission, Olympia, Washington.

EXHIBIT 40
Page 4

Date of Pollution	April 1966	May 1966	June 1966
Name of Vessel	DEMOSTHENES	RIDER VICTORY	B.C. B & D ELECTRA No. 179107
Nationality	Greek	American	Canadian
Place of Occurrence	Swan Island Lagoon Portland, Oregon	Swan Island Shipyard Portland, Oregon	Friday Harbor, Washington
What type of Refuse if Refuse Act.			

Date of Pollution	July 1966	July 1966	July 1966
Name of Vessel	ARCTURUS	JANE STOVE	
Nationality	Liberian	Norwegian	
Place of Occurrence	Port Industrial Waterway Tacoma, Washington	Terminal 2, Berth 1 Portland, Oregon	900 Westlake N. Seattle, Washington
What type of Refuse if Refuse Act.			Oil

Date of Pollution	August 1966	July 1966	July 1966
Name of Vessel	NIKKEI MARU	AVENIR	ITHACA ISLAND
Nationality	Japanese	Swedish	Liberian
Place of Occurrence	Point Adams Sta., Columbia River	Terminal 4, Berth 1, Portland, Oregon	Terminal 4, Berth 1, Portland, Oregon
What type of Refuse if Refuse Act.	Trash		

EXHIBIT 40
Page 5

Date of Pollution	September 1966	September 1966	October 1966
Name of Vessel	BARGE CRANE	BARGE NO. 10	HAMILTON VICTORY
Nationality	American	American	American
Place of Occurrence	Swan Island Lagoon Portland, Oregon	Railway Terminal Co. Seattle, Washington	Swan Island Shipyard, Portland, Oregon
What type of Refuse if Refuse Act.			

Date of Pollution	October 1966	October 1966	November 1966
Name of Vessel	PACIFIC LOGGER	VICTORIA LOYAL	M/S SEATTLE
Nationality	Liberian	Liberian	Swedish
Place of Occurrence	Terminal 4, Berth 1, Portland, Oregon	Kingsley Lumber Co., Portland, Oregon	Terminal 1, Berth 8, Portland, Oregon
What type of Refuse if Refuse Act.			

Date of Pollution	November 1966	December 1966	December 1966
Name of Vessel	ETNEFJELL	CAPETAN COSTAS PANOU	CIUDAD DE MANIZALES
Nationality	Norwegian	Greek	Columbian
Place of Occurrence	Terminal 4, Pier 5, Portland, Oregon	Portland Public Docks	Portland Public Docks
What type of Refuse if Refuse Act.			

EXHIBIT 40
Page 6

Date of Pollution	September 1966	December 1966	December 1966
Name of Vessel	GOTTINGEN	HOOSIER STATE	WORLD YURI
Nationality	German	American	British
Place of Occurrence	Portland Public Docks	Portland Public Docks	Pen Ply Dock Port Angeles, Washington
What type of Refuse if Refuse Act.			

Date of Pollution	December 1966	December 1966	December 1966
Name of Vessel		MATSUMAE MARU	PINTO
Nationality		Japanese	Norwegian
Place of Occurrence	At foot of Calif. St., North Bend, Oregon	Portland Public Docks	Portland Public Docks
What type of Refuse if Refuse Act.	Bunker C		

EXHIBIT 41
Page 1

Oil Pollution Investigations
Navigable Waters of the Pacific Northwest[87]
(Alaska)
July 1956 - January 1967

EXHIBIT 41
Page 2

NPACO-OP-P 3 January 1967

SUBJECT: Oil Pollution in Cook Inlet

TO: Commander
17th Coast Guard District
P. O. Box 3-5000
Juneau, Alaska 99801

1. Reference is made to your letter of 12 December 1966, reference number 5922, in which you requested information concerning pollution in Cook Inlet and action taken by this department.

2. A complaint was received indirectly through the Division of Lands on 22 June 1966 that Rig Tenders, Inc. was disposing rubbish, logs, roots and earth into Cook Inlet while constructing their dock in the Nikiski beach area. Rig Tenders, Inc. was notified of the complaint and ordered to desist from further dumping of material into Cook Inlet. No formal protest was ever received in this matter. We have no knowledge of any material being dumped into the inlet on 15 July 1966 as reported by Mr. Simon.

3. No complaints concerning oil pollution were received prior to September 1966. At this time we were notified informally of previous violations, although they were not listed specifically.

4. A reconnaissance flight was made with Fish and Wildlife personnel on 7 September 1966 and oil sheen was noted on the waters of Cook Inlet at various locations. All oil companies operating in the inlet were informed of the law and warned to exercise greater caution in the handling of pollutants. A sample notice is inclosed for further information. In addition, notices were reported through news media advising the public that anyone observing a violation should report it immediately to this office. Subsequently, a report was received from the Office of the Solicitor, Department of the Interior, concerning a violation that was witnessed by two fisherman where oil was seen to be discharged from a platform on 18 July 1966. Colored photographs were inclosed with the report. Further investigation of production practices indicated that the fluid being ejected

Copy filed "Oil Drilling Pollution - Coordination"

EXHIBIT 41
Page 3

NPACO-OP-P 3 January 1967
SUBJECT: Oil Pollution in Cook Inlet

from the platform was in all probability ligno-sulphonate mud which is a derivative of coal and strongly resembles oil, as it has the same specific gravity. Since no sample of the pollutant was inclosed with the much delayed report, no official action was taken.

5. On 23 September 1966 a report was received that a pipe line break had occurred from the Shell Oil platform and an aerial observation showed crude oil leading from their platform. An attempt to land to secure samples was thwarted due to rough water. It was estimated that 40 to 50 barrels of oil escaped. The company was doing everything possible to prevent further loss. This break was not listed in Mr. Simon's letter.

6. The oil dumped from a barge on 31 October 1966 was reported immediately by the Shell Oil Company. They were forced to dump the cargo when the barge began to roll out of control in heavy seas during a storm in order to save the barge and the lives of the men on board. Section 3 of the Oil Pollution Act of 1924 states that it is unlawful to discharge oil into navigable waters "--except in case of emergency imperiling life or property--". This was considered to fall in this category.

7. In contacting the various State and Federal agencies and navigational interests it was evident that clarification as to the responsibilities of each agency was needed and that lines of communication to exchange information to control the pollution problem should be established. A meeting of several agencies was instigated by Fish and Wildlife, and was held on 27 September 1966. A copy of the minutes of this meeting is inclosed as it may be of value in forming your reply. The Division of Lands conducted a "Multiple Use Seminar" in both Soldotna and Anchorage, 16 November and 17 November 1966, to provide the fishing and oil industries as well as the State agencies an opportunity to exchange information and create a field of understanding on the problems of multiple use of the inlet waters.

8. Past experience has shown that violations have not been adequately documented, samples have not been taken and timely reports have not been submitted to the proper authority. Efforts to correct these deficiencies have been made and more stringent control should be maintained in the future.

FOR THE DISTRICT ENGINEER:

J Jacobson
JOHN JACOBSON
Chief, Construction Division

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as

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3 Jan 6
CONST
aLL
Miss Loss/ps/22
OREC: Permit S

EXHIBIT. 41
Page 4

MEMO TO FILES: 22 June 1966

Howard Grey, Division of Lands, informed me that they had received a complaint regarding the dumping of material in Cook Inlet in the clearing of the dock site.

Mr. Dragseth, a local fisherman, had called in his office to report this. Since Mr. Grey has recently assumed his position (Kirk Stanley left) he was not aware that this came under our jurisdiction although he did tell Dragseth to contact us.

No official complaint was ever received; however, Mr. Grey investigated the site and reported to me 21 June that Rig Tenders, Inc. is dumping material and creating a "mess". Since the state has no authority over this he felt he should let us know what is happening. He was surprised that Dragseth had not contacted us.

While we ordinarily wait for "formal" written complaints, I felt that a letter should be written to Rig Tenders, Inc. to stop further deposition of debris in the inlet.

AURORA L. LOSS
Chief, Permit Sec

EXHIBIT 41
Page 5

NPACO-OP-P 22 June 1966

Mr. Gene Stearns
Rig Tenders, Inc.
Redoubt Motel
Kenai, Alaska 99611

Dear Mr. Stearns:

A complaint has been received in this office that you are dumping and disposing of rubbish, logs, roots and earth into Cook Inlet and are creating a hazard to navigation.

Section 13 of the River and Harbor Act of 3 March 1899 states that it is unlawful to allow any discharge or deposit of any refuse matter of any kind or description whatever other than that flowing from streets and sewers in liquid form into any navigable water of the United States; and it is not lawful to deposit material of any kind in any place on the bank of any navigable water, where it is liable to be washed into the navigable water, either by ordinary or high tides, or by storms or floods, where navigation may be impeded or obstructed.

Section 16 of the River and Harbor Act of 1899 provides that any person violating Section 13 of this Act is guilty of a misdemeanor and upon conviction may be fined up to $2,500 or imprisoned up to one year, or both. In addition, you are liable for damage to vessels or equipment if the court so decrees.

Condition (b) contained in the Department of the Army permit issued to you states:

> "... Any material to be deposited or dumped under this authorization, either in the waterway or on shore above high water mark, shall be deposited or dumped at the locality shown on the drawing hereto attached, and, if so prescribed thereon, within or behind a good and substantial bulkhead, such as to prevent escape of the material into the water. ..."

If the complaint is valid, immediate action should be taken to prevent further dumping of material in Cook Inlet. It is requested that you acknowledge receipt of this letter stating the action you have taken regarding this matter.

Sincerely yours,

DLK signed
CLARE F. FARLEY
for Colonel, Corps of Engineers
District Engineer

cc: Division of Lands

276<

22 Jun 66
CONST
Nicholls
~~Gami~~
EXECO
Buchanan
~~Melbo~~
Farley
Miss Loss/ps/2227
OREC: Permit Sec

OREC Corps files Rig Tenders, Cook Inlet 64

9

FORM SA-1B
100M 9/65

EXHIBIT 41
Page 6

MEMORANDUM State of Alaska

TO: E. J. Huizer, Water Rights Coordinator
ADF&G, Juneau

DATE: November 2, 1966

FROM: Paul A. LeRoux, Water Projects Biol.
ADF&G, Homer

SUBJECT: Oil pollution (Glomar II)

On October 31, 1966, the Glomar II, a drilling vessel, located about three to four miles north of the east tip of West Foreland was in the process of testing a well.

According to Mr. Kate of Shell Oil, high winds of 60 to 70 mph were blowing the vessel off location and causing the vessel to be in jeopardy. As a safety precaution about 60 barrels of crude oil, from the testing, being held in the hole was released overboard.

Mr. Kate states that the decision was made by the Captain of the vessel and the drilling foreman. Reportedly, a State employee was on board at the time.

cc: C. H. Meacham, Regional Supervisor, Comm. Fish., Anchorage

forwarded to this office by Paul LeRoux
14 Nov 66

EXHIBIT 41
Page 7

MEMO TO FILES: 31 October 1966

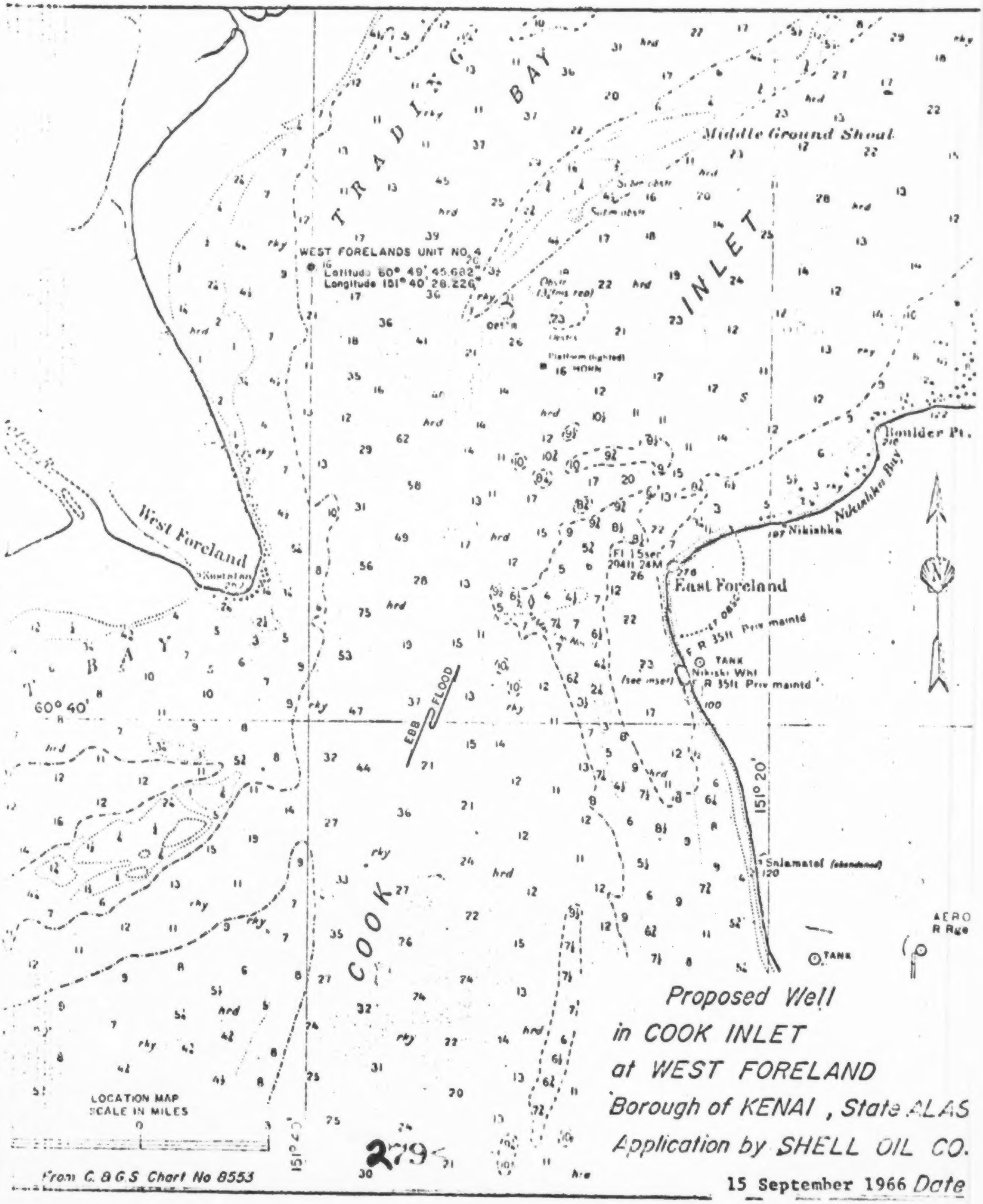
Mr. Tom Cate from Shell Oil Company called to report that approximately 60 barrels of oil had been dumped from their drilling barge located north of West Foreland during a storm on this date.

The oil was causing a swaying motion, and dumping was considered necessary due to the danger of losing the barge and personnel on the barge. He stated that there were some men from the State aboard the barge and they recommended dumping the oil.

Mr. Cate had already reported the dumping to the Bureau of Mines and Minerals.

AURORA L. LOSS
Chief, Permit Section

EXHIBIT 41
Page 8


TRADING BAY
Middle Ground Shoal
INLET
WEST FORELANDS UNIT NO. 4
Latitude 60° 49' 45.682"
Longitude 151° 40' 28.226"
Platform (lighted)
HORN
Boulder Pt.
Nikishka
Nikishka Bay
East Foreland
West Foreland
F R 35ft Priv maintd
TANK
Nikiski Whf
(see inset)
Salamatof (abandoned)
AERO R Rge
TANK
60° 40'
151° 20'
151° 40'
EBB
FLOOD
COOK
BAY
LOCATION MAP
SCALE IN MILES
0
3
From C. & G.S. Chart No 8553

Proposed Well
in COOK INLET
at WEST FORELAND
Borough of KENAI , State ALAS
Application by SHELL OIL CO.
15 September 1966 Date

279

EXHIBIT 41
Page 9

NPACO-OP-P

31 August 1966

Honorable Peter M. Deveau
Mayor of Kodiak
Kodiak, Alaska 99615

Dear Mayor Deveau:

A report has been received that the City of Kodiak is allowing vessel operators in the Kodiak Small Boat Basin to pump bilges inside the harbor area. A high concentration of oil, fuel and various debris was evident in the basin area at the time of inspection.

A notice is posted on the float approach requesting that care be taken in fueling to keep spillage to a minimum because of harmful effects that will result to the float planks constructed of polystyrene. However, the prime concern of the Department of the Army is that the dumping of oil or oil products from a vessel is a violation of the Oil Pollution Act of 1924. The dumping of any material or debris into a navigable water other than that flowing from the streets, is a violation of the River and Harbor Act of 3 March 1899. A copy of the Oil and Refuse Pollution Manual for Alaska is inclosed for further reference.

It is requested that more stringent effort be expended in policing the basin area to prevent further contamination and harmful effects.

Since space in the basin is at a premium, it may be well to notify occupants that should they not adhere to the requirements to prevent pollution in the basin that they may lose the privilege of mooring in the area.

Your early attention in this matter is solicited.

Sincerely yours,

CLARE F. FARLEY
Colonel, Corps of Engineers
District Engineer

cc: Div of Water & Harbors

280<

31 Aug 66
CONST
~~Nicholl~~
EXECO
~~Barnes~~
~~Melbo~~
~~Farley~~

Miss Loss/ps/22274
OREC: Permit Sec

File OK'd [illegible]

EXHIBIT 41
Page 10

NPAEN-DB-H **Kodiak Small Boat Basin Condition**

//THRU Chief, Hydr Des Sec
Chief, Plng & Rept Br
Chief, Elec Sec
Act Chief, Des Br
Act Chief, Engr Div

Hydr Des Sec

19 August 1966
Mr. Stricklin/jk/753-4205
OREC: Engr Div

TO MEMO TO FILES

1. On 5 and 6 July the writer visited the Small Boat Basin at Kodiak, Alaska. At the time of this visit the stalls were filled to capacity, and the City Engineer said there was a waiting list of people wanting a space. Several deficiencies to the float system were noted and mentioned in my memo to files dated 12 July 1966. Chief, Hydraulic Design Section requested I write a separate DF through the above branches and sections for your information.

2. Several of the float lights had been broken off at their base by the larger fishing boats' bow when docking. One or two had been repaired and re-broken. (See attached photos.) These larger boats protrude over the finger float for half or more of the float width when they are tied in their stall. In the future a less vulnerable location for float lighting would be on the float directly behind the float mooring piles or on top of the mooring piles. The latter location would eliminate the cost of the light standard.

3. Pumping of boat bilges inside the harbor seemed to be common practice, at least at the time I observed the basin. Oil, fuel, and various debris was evident to a high concentration in the basin water. Evidently, the city does not regulate or require the boat owners to comply with the posted sign on the float approach which states that, "Petroleum products are harmful to the polystyrene floatation planks. Boat owners should take precautions when fueling to keep spillage to a minimum." In future float design an improvement could be made if floatation planks were developed from materials more resistant to petroleum products, since it does not appear likely the city will enforce these regulations. The state of Alaska Division of Water and Harbors has extensive information on various products. Presently I understand the cost is prohibitively higher for floatation planks made nonsusceptible to petroleum deterioration. With their use becoming more common this price may become more feasible.

4. Many of the stall floats list to one side from overloading and have missing or broken sections of the longitudinal sills or siding members. Possible redesign for future stall float construction is required to reduce the maintenance problems that appear to be devloping.

1 Incl
as

MICHAEL R. STRICKLIN
Hydraulic Design Section

Copies furnished:
Oper Br
Hydr Des Sec

EXHIBIT 41
Page 11

MEMO TO FILE: 26 May 1966

About 4:00 P.M. a phone call was received from Mr. John Ireland who owns a marina with six small boats at Whittier. He complained that tugs are dumping black oil, apparently bilge oil, into Passage Canal. He has cleaned his boats twice since the water opened in April and they and all lines are covered with oil again.

One vessel, the WANDO, was in the area last night and more oil was visible on the water this morning, although he did not observe any being dumped. This vessel belongs to the Puget Sound Tug & Barge Company. The Canadian National Tug was observed dumping oily bilge into the bay a few days ago.

He requested immediate action be taken as he planned to write to Senator Bartlett if relief was not found. He said that the Alaska Railroad Officer in charge of the port is Mr. Alton Jergens.

I suggested that he put his complaint in writing and also send a bottle of polluted water in for "back-up". He requested that he be kept informed (GRover 2-2357).

I then phoned Mr. Bruce of ARR (265-2611), who suggested local contacts and provided phone numbers.

Mr. Krause is Traffic Manager for Canadian National. He suggested I write to Mr. William Clark, Vice President, Washington Tug & Barge Company, Pier 43, Seattle. They are contractors who tow the Canadian Pacific barges.

Mr. Hutton of Puget Sound Alaska Van Lines (277-2571) said he had heard complaints of the presence of "black oil" at Whittier but was happy to report it was not from their ships as they use diesel. He had received his report from Mr. Jerry Protsmen, who works for the ARR at Whittier. He will check further, however, and varify that their ships are NOT involved. He suggested that I check into operations of MSTS vessels as there is a possibility that they may be adding to the problem. He suggested I contact Mr. Philips (754-3213).

Commander Folger of the U.S. Coast Guard in Anchorage discussed the complaint of oil pollution in Whittier 27 May 1966. He is Captain of the Port for Anchorage and the Juneau officer is Captain of the Port for all other ports in Alaska. They have agreed that should an action be required at any of the ports in this area that Commander Folger would act as a representative of the Juneau office.

Two Coast Guard vessels stationed on the Alaska mainland are the SEDGE at Cordova and the SORRELL at Seward. At present neither vessel can get to Whittier to examine the area. Someone will be in Whittier to inspect the next unloading of explosives, however, and they will investigate the complaint. He states that the MSTS vessel does not go into Whittier (Mr Kreitlow, our POL Section, says they do, but they have a "clean" operation).

He stated that their experience shows that Mr. Ireland is a chronic complainer and they have heard from him previously. Mr. Kreitlow of this office has asked the Army to check their storage tanks at Whittier to ascertain that no leakage is occurring. He suggested that perhaps this oil is coming from the ARR power plant as they use this type of oil (Bunker oil - Navy Special).

ALL
AURORA L. LOSS
Chief, Permit Section

EXHIBIT 41
Page 12

MEMO TO FILES: 10 June 1966

Since Mr. Ireland did not submit a written complaint I phoned him on this date to learn whether the pollution problem at Whittier still was present.

Mr. Ireland stated that it has been considerably better. He went on to say that he actually saw the Puget Sound barge dumping bilge oil into the bay. The incidence of oil on the water occured three times in a row after a Puget Sound barge had fueled up at the dock. This line calls in Whittier two to three times a week.

I informed him that everyone had been notified by phone of his complaint and apparently the vessel operators have been instructed to cease any operation that would pollute the water in this area.

I requested that he notify us if this should occur again and written notice to the offender will be instituted.

Aurora L Loss
AURORA L. LOSS
Chief, Permit Section

EXHIBIT 41
Page 13

UNITED STATES COAST GUARD

ADDRESS REPLY TO

Officer in Charge
Marine Inspection
Box 2631
Juneau, Alaska

I-142
22 September 1961

From: Investigating Officer
To: Officer in Charge, Marine Inspection, Juneau, Alaska

Subj: Oil Pollution, Skagway Bay, 11 September 1961, investigation of

FINDINGS OF FACT

1. On 11 September 1961 at about 0030 zone plus 9 time, approximately 4500 gallons of JP-4 jet fuel was discharged into the waters of Skagway Bay through an open loading valve located beneath the White Pass & Yukon Railway Co. dock while the Standard Oil Company of California tanker R. G. FOLLIS, O. N. 251 150, was discharging cargo.

2. On 7 September 1961, N. N. Caldwell and Lavon Beck, Standard Oil Company of California servicemen, commenced cleaning the No. 2 storage tank and its filling lines at the Standard Oil Co. Terminal in Skagway. The tank and lines were flushed out with water and a cleaning compound. The cleaning operation was completed on 9 September 1961 and the servicemen departed the area after telling the local terminal agent, Mr. Max M. Steffen, Box 531, Skagway, Alaska, that the tank was ready in all respects to receive jet fuel.

3. The fill lines for the several storage tanks are so arranged that the line from each tank goes from the tank through a stop valve. Thence it continues under and parallel to the dock for approximately 600 feet and terminates in a fill header where another valve is located. About 500 feet toward the tanks from the terminal header a branch line comes off the main line at a 90° angle and leads directly to the face of the dock. This branch line also terminates in a header and is protected by a gate valve. A vessel may discharge into the tank from either header location. All lines are four inches in diameter.

4 The Standard Oil Co. tanker, R. G. FOLLIS, O. N. 251 140, arrived at the port of Skagway and made fast to the White Pass and Yukon Railway Co. Dock at about 2100 on 10 September 1961, and began discharging various grades of liquid cargo into shore storage tanks.

5. At about 0030 11 September 1961, the tanker commenced discharging JP-4 jet fuel into #2 storage tank through the branch filling line header.

EXHIBIT 41
Page 14

6. At 0050, Mr. Max Steffen, the terminal agent, went to the main line header with the intention of cracking the valve to allow any residue of water in the main line to be forced out by the incoming jet fuel. On arriving at the header line, he found the valve open and the cargo being pumped into the bay under the dock. Mr. Steffen immediately closed the valve. Later tank gaugings indicated that approximately 4500 gallons of jet fuel had been discharged into the bay.

285

15

CONCLUSIONS

7. It is concluded that 4500 gallons of JP-4 jet fuel were pumped into the waters of Skagway Bay during the early hours of 11 September 1961 through failure of the servicemen to close the valve after flushing out the fill line to #2 storage tank. It is further concluded that the terminal manager, Mr. Max M. Steffen, was negligent in not checking the position of the line valves prior to the commencement of receiving operation.

RECOMMENDATIONS

8. It is recommended that a copy of this report be forwarded to the District Engineer of the U S. Army Corps of Engineers for appropriate action.

C B Williams
C. B. WILLIAMS

Encl:
(1) Line drawing of pipeline arrangement
(2) Statement of Mr. Max M. Steffen
(3) Photo of valve left open
(4) Copy of letter of 15 September from
Deputy Collector of Customs, Skagway, Alaska

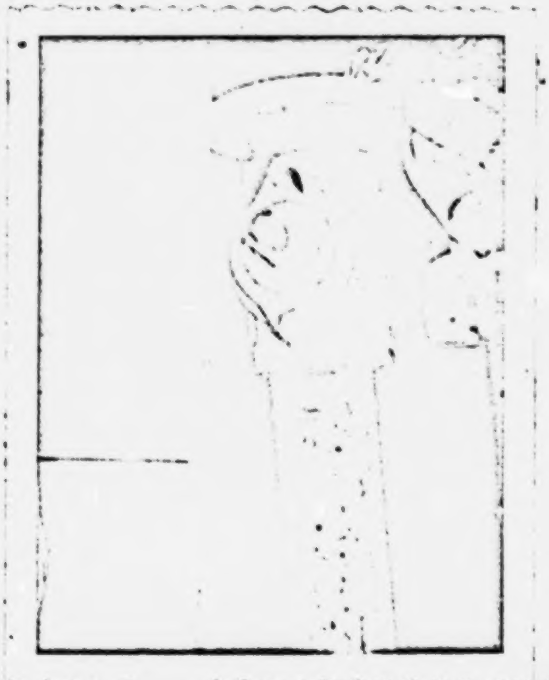


EXHIBIT 41 6L
Page 16

STANDARD OIL COMPANY OF CALIFORNIA,
WESTERN OPERATIONS, INC.
1318 FOURTH AVENUE • SEATTLE 11 • WASHINGTON

MARKETING DEPARTMENT
A. C. HINCKLEY
REGIONAL OPERATIONS MANAGER

October 25, 1961

The District Engineer
U. S. Army Engineer District Alaska
P. O. Box 7002
Anchorage, Alaska

Gentlemen:

With reference to your letter file NPAHO-P dated October 4, 1961 concerning a spill of petroleum products at Skagway, Alaska on September 11, 1961, we offer the following explanation:

Early in September we were engaged in changing products in storage tanks at our Skagway plant. Such changes are routine and are made to accommodate seasonal requirements at our bulk plants. We exercise all caution when making such transfers, both for reason of the hazard involved in spilled products and from the monetary loss involved in such an occurrence.

In this case, some one of several different persons opened a dock header valve, either during or before a tank delivery of JP-4 into storage. We have not yet definitely established how this occurred. It was certainly accidental and we very much regret the spill. As you know, it is a light product and dissipated rapidly. There was no damage.

Operating instructions, intended to guard against such losses, are being reviewed with all concerned and we are sure that it will not happen again.

Very truly yours,

A. C. HINCKLEY

By W.D. Lee

SDS:fd

✓

12

EXHIBIT 41
Page 17

NPAHO-P

4 OCT 1961

Mr. Max M. Steffen
Box 531
Skagway, Alaska

Dear Mr. Steffen:

A report has been received in this office from the Officer in Charge, Marine Inspection, 17th Coast Guard District at Juneau, Alaska, that on 11 September 1961, approximately 4,500 gallons of JP-4 jet fuel was discharged into the waters of Skagway Bay through an open loading valve located beneath the White Pass & Yukon Railway Co. dock while the Standard Oil Co. tanker FOLLIS was discharging cargo.

The discharging of oil into any navigable water of the United States is a direct violation of the Oil Pollution Act of 1924 (USC 431.437). This act states that except in case of an emergency imperiling life or property, or unavoidable accident, or unless permission has been procured from the Secretary of the Army, it is unlawful for any person to discharge oil by any method or means upon the coastal navigable waters of the United States from any vessel using or carrying oil. The Secretary of the Army is authorized and empowered to prescribe regulations permitting the discharge of oil from vessels under certain conditions and in places as in his opinion will not be deleterious to health or seafood, or a menace to navigation or dangerous to persons or property engaged in commerce.

Any person violating this act is guilty of a misdemeanor and is liable to a fine up to $2,500 and one year imprisonment.

It is requested that you acknowledge receipt of this letter, stating what damage resulted from the discharge of the fuel and the action taken.

Sincerely yours,

FLOYD H. HENK
Captain, CE
Executive

3 Oct 61
CONSTR
Pr[illegible]
ExecO
McCabe

Misc Loss/22274/ac
OREC: Permit Sec

EXHIBIT 41
Page 18

TREASURY DEPARTMENT
BUREAU OF CUSTOMS
OFFICE OF THE DEPUTY COLLECTOR

Skagway, Alaska,

September 15, 1961.

Commandant, 17th Coast Guard District,

Juneau, Alaska.

Dear Sir;

On September 10, 1961 the Standard Oil Company tanker R. G. Follis, arrived at Skagway, Alaska, to discharge bulk fuel oil into shore tanks.

At approximately 12:30 A.M. September 11, 1961 the ship started discharge of J P 4 jet fuel; however thru negkigence of workmen who had been cleaning tanks and lines, a shore line valve under the W.P.& Y.Rte dock had been left open, with the result that approximately 4500 gallons jet fuel was pumped into the waters of Skagway Bay.

Very truly yours,

G. S. Villesvik,
Deputy Collector in Charge,
U. S. Customs, Skagway, Alaska

cc:Collector of Customs,
Juneau, Alaska

EXHIBIT 41
Page 19

TREASURY DEPARTMENT
U. S. COAST GUARD
CG-3639 *(10-55)*

OIL POLLUTION

(Report of discharge of oil, oily bilge and ballast water into navigable water or within 50 miles of the coast of the United States)

REPORTING UNIT USCG - 95301	CG DISTRICT 17TH CGD	DATE OF REPORT 29 OCTOBER 1957

SECTION I—VESSEL DATA

1. NAME OF VESSEL FERN II	2. OFFICIAL NUMBER 218037	3. NATIONALITY U. S.
4. HOME PORT JUNEAU, ALASKA		5. INTERNATIONAL CALL WA 4948
6. TYPE OF VESSEL ☐ DRY CARGO ☐ TANKER ☒ OTHER *(Specify)* FISHING VESSEL	7. TYPE OF PROPULSION DIESEL	

8. OTHER IDENTIFYING INFORMATION *(If available)*
NONE.

9. OWNER(S) *(Name and address)* JOHN LOWELL 411 WEST TWELFTH STREET JUNEAU, ALASKA	10. LOCAL AGENT(S) *(Name and address if applicable)* NONE

11. MASTER		12. CHIEF ENGINEER	
NAME AND ADDRESS *(If available)*	LICENSE NO.	NAME AND ADDRESS *(If available)*	LICENSE NO.
SAME AS NO. 9	* * * * *	* * * * * * * * * * * * * * * *	* * * * *

SECTION II—POLLUTION DATA

1. PERSON REPORTING POLLUTION *(Name and address if available)* D. G. HOWLAND, LT, USCG CG-95301, JUNEAU, ALASKA	2. WITNESS *(Name and address if available)* W. L. LETT, BM1, USCG CG-95301, JUNEAU, ALASKA	3. SIGNED STATEMENT ATTACHED *(Check)* ☐ YES ☒ NO

4. PLACE OF POLLUTION *(Local name or geographic coordinates)* BOAT HARBOR, JUNEAU, ALASKA	5. TIME 1110	6. DATE 29 OCT. 1957	7. PHOTOGRAPH ATTACHED ☐ YES ☒ NO

8. OPERATING PERSONNEL INVOLVED	9. DUTY ON VESSEL *(If available)*	10. LICENSE NUMBER *(If available)*	11. SIGNED STATEMENT ATTACHED	
			YES	NO
NONE				

12. CAUSES OF POLLUTION *(Explain in "Remarks")*

PERSONNEL FAILURE *(Incompetency, willful disregard of law, carelessness, etc.)* ☒ YES ☐ NO	TYPE OF LICENSE OR CERTIFICATES HELD BY PERSON *(If applicable)*
EQUIPMENT FAILURE ☐ YES ☒ NO	
13. VIOLATION OF OIL POLLUTION ACT, 1924 ☒ YES ☐ NO	14. ON GREAT LAKES, VIOLATION OF REFUSE ACT, 1899 ☐ YES ☐ NO

15. EMERGENCY MEASURES TAKEN TO REDUCE FIRE HAZARDS
NONE.

SECTION III—OIL POLLUTION SAMPLES

When samples of pollution to be used as evidence are taken from on board a vessel and from the water, the following information shall be filled in and also put on the labels of the samples.

1. SOURCES A. BILGES OF FERN II B. WATER ALONG SIDE OF FERN II	2. TIME A. 1110 B. 1110	3. DATES A. 29 OCTOBER 1957 B. 29 OCTOBER 1957
4. NAME OF PERSON(S) TAKING SAMPLES D. G. HOWLAND, LT, USCG	5. WITNESS(ES) TO TAKING SAMPLES W. L. LETT, BM1, USCG	

290<

[illegible] TREASURY, USCGHQ, WASH., D.C.

EXHIBIT 41

REMARKS (Including attitude of personnel and cooperation received)

FERN II was observed pumping oil into the water at 1100, 29 October 1957. The owner was advised that this should not be done in the harbor. He stated he could not do otherwise and indicated that he did not intend to do otherwise. Samples were taken.

INVESTIGATING OFFICER (Typed name, and rank or rate) D. G. HOWLAND, LT, USCG	SIGNATURE (Investigating Officer) x D G Howland

FIRST ENDORSEMENT

DATE	SIGNATURE (Unit Commanding Officer)

SECOND ENDORSEMENT

DATE	SIGNATURE (District Commander)

EXHIBIT 41
Page 21

o
30 October 1957
A17
Serial No. 1896

Mr. John Lowell
411 West 12th Street
Juneau, Alaska

Dear Mr. Lowell:

I am enclosing a copy of a report which states that your vessel, the [illegible] II violated the Oil Pollution Act of 1924 (33 USC 431-437). This Act prohibits the discharge of oil into the waters of the United States.

Since the Corps of Engineers, U. S. Army, is charged with the enforcing of the Oil Pollution Act, the report has been forwarded to the District Engineer, U. S. Army, for a determination of action to be taken; this could mean prosecution under the provisions of the Act.

Your cooperation in reducing the menace of oil pollution is needed. This report will acquaint you with the facts which existed when the Coast Guard investigated the incident.

A group of leaders of the Maritime Industry have formed an Oil Pollution Panel under the sponsorship of the Merchant Marine Council, U. S. Coast Guard, to seek means to eliminate the menace of oil pollution. I am sure that this panel will welcome your cooperation. By copy of this letter I am requesting the Chairman, Oil Pollution Panel, Merchant Marine Council, U. S. Coast Guard, 1300 E Street, N. W., Washington 25, D. C., to furnish you information concerning procedures to follow to eliminate this menace.

If there are any questions concerning the information in the enclosed report, I shall furnish you the answers if available.

Very truly yours,

HENRY U. SCHOLL
Captain, U. S. Coast Guard
Chief of Operations Division
Seventeenth Coast Guard District
By direction of District Commander

Encl:
(1) Copy of report, Form CG-3639

292

EXHIBIT 41
Page 22

TREASURY DEPARTMENT
U. S. COAST GUARD
CG-3639 (10-55)

OIL POLL ION

(Report of discharge of oil, oily bilge and ballast water into navigable water or within 50 miles of the coast of the United States)

REPORTING UNIT [illegible] Coast Guard District Office	CG DISTRICT 17th	DATE OF REPORT 2[illegible] December 1956

SECTION I—VESSEL DATA

1. NAME OF VESSEL [illegible]	2. OFFICIAL NUMBER [illegible]	3. NATIONALITY U. S.
4. HOME PORT Juneau, Alas.		5. INTERNATIONAL CALL - - - - -
6. TYPE OF VESSEL ☐ DRY CARGO ☐ TANKER ☐ OTHER (Specify) Fishing	7. TYPE OF PROPULSION Gas . Screw	
8. OTHER IDENTIFYING INFORMATION (If available) - - - - -		
9. OWNER(S) (Name and address) [illegible] 126 Willoughby Avenue Juneau, Alaska	10. LOCAL AGENT(S) (Name and address if applicable) - - - - -	

11. MASTER		12. CHIEF ENGINEER	
NAME AND ADDRESS (If available)	LICENSE NO.	NAME AND ADDRESS (If available)	LICENSE NO.
- - - - -	- - -	- - - - -	- - -

SECTION II—POLLUTION DATA

1. PERSON REPORTING POLLUTION (Name and address if available) [illegible] P. O. Box 2598 Juneau, Alaska	2. WITNESS (Name and address if available) William L. LATT, [illegible] (280-764) P. O. Box 2598 Juneau, Alaska	3. SIGNED STATEMENT ATTACHED (Check) ☐ YES ☒ NO

4. PLACE OF POLLUTION (Local name or geographic coordinates) Small Boat Harbor, Juneau, Alaska	5. TIME Approx. 1600	6. DATE 26 DEC 1956	7. PHOTOGRAPH ATTACHED ☐ YES ☒ NO

8. OPERATING PERSONNEL INVOLVED	9. DUTY ON VESSEL (If available)	10. LICENSE NUMBER (If available)	11. SIGNED STATEMENT ATTACHED	
			YES	NO
[illegible]	Owner	- - - - -		X

12. CAUSES OF POLLUTION (Explain in "Remarks")

PERSONNEL FAILURE (Incompetency, willful disregard of law, carelessness, etc.) ☒ YES ☐ NO Carelessness.	TYPE OF LICENSE OR CERTIFICATES HELD BY PERSON (If applicable) NONE
EQUIPMENT FAILURE ☐ YES ☒ NO	
13. VIOLATION OF OIL POLLUTION ACT, 1924 ☒ YES ☐ NO	14. ON GREAT LAKES, VIOLATION OF REFUSE ACT, 1899 ☐ YES ☐ NO

15. EMERGENCY MEASURES TAKEN TO REDUCE FIRE HAZARDS

Harbormaster and Juneau Fire Department notified. M/V Forester and CG-95301 turned over at dock in attempt to "pump" out the harbor with fair results against flooding tide.

SECTION III—OIL POLLUTION SAMPLES

When samples of pollution to be used as evidence are taken from on board a vessel and from the water, the following information shall be filled in and also put on the labels of the samples.

1. SOURCES A. From water adjacent to boat. B. From discharge hose of bilge pump of M/[illegible]	2. TIME A. 1725 B. [illegible]	3. DATES A. 26 December 1956 B. 26 December 1956
4. NAME OF PERSON(S) TAKING SAMPLES [illegible] LATT, William L. (2[illegible]-764) [illegible] 293<	5. WITNESS(ES) TO TAKING SAMPLES a. [illegible], Melvin [illegible] Jr., (31[illegible]) [illegible] b. [illegible], James W. Jr., (3[illegible]) [illegible]	

EXHIBIT 41
Page 23

REMARKS *(Including attitude of personnel and cooperation received)*

About 1700, 26 December 1956, Mr. John A. Gallagher, while walking up float No. one of the Juneau Small Boat Harbor first noticed oil in the water. He went on board the CG 95301 and reported to LMTT that he had observed oil in the harbor. LMTT and Mr. Gallagher took a turn around the float attempting to locate the source of the spill. Observing a light on the GINGER N., they went aboard the boat and talked to Mr. Sam Newman. Mr. Newman stated he had just finished pumping his forward bilge. He further admitted he had drained his stove oil tank into the bilge prior to pumping it. Mr. Gallagher went back to his vessel, the [illegible], and commenced turning over at the dock in attempt to "pump" the oil out of the Small Boat Harbor. LMTT returned to the CG-95301 and informed Mr. Tothall of the incident. Mr. Newman secured his boat and went home. The Harbormaster was notified of the spill and the word passed among the other vessels in the harbor. The Juneau Fire Department was also notified. At 1725 Mr. Tothall took a sample of the spill from the water alongside the GINGER N. The sample is marked Exhibit "A". The Investigating officer arrived at scene at 1750. Mr. Gallagher, LT [illegible] and crew of CG-95301 were interviewed. LMTT was directed to obtain a sample of the oil in the bilge of the GINGER N. LMTT drained the discharge hose from the bilge pump. This sample is marked Exhibit "B". At 1830, CG-95301 commenced turning over at the dock to "pump" the harbor clear. At 1900, the CG-95301 and [illegible] secured their engines as the oil appeared to be fairly well dispersed.

At 1000, 27 December 1956, Mr. Sam Newman was interviewed by the Investigating Officer. Mr. Newman stated he had gone down to his boat on 26 December 1956. His stove oil tank had water mixed with the oil so he drained it into his bilge. This tank has a 15 gallon capacity. Mr. Newman stated there was only about two gallons in the tank when he drained it. Mr. Newman then pumped his bilge water and sludge over board into the Small Boat Harbor. Mr. Newman said the water in the bilge was up to his engine and that he had to pump his bilge or ruin his engine. Mr. Newman stated he was sorry he had pumped oil in the harbor and that he would not do it again. Mr. Newman concluded by saying that he was broke and did not have any money to pay a fine if one was assessed.

The amount of oil pumped into the harbor was not determined. By the time the Investigating officer reached the scene, the oil had spread over a considerable part of the south end of the Boat Harbor.

Due to darkness, the exact extent of the spill could not be observed. However, it appeared to be appreciably more than the two gallons admitted by Mr. Newman.

INVESTIGATING OFFICER *(Typed name, and rank or rate)*	SIGNATURE *(Investigating Officer)*
[illegible], LT, USCG	

FIRST ENDORSEMENT

DATE	SIGNATURE *(Unit Commanding Officer)*

SECOND ENDORSEMENT

Forwarded.

DATE	SIGNATURE *(District Commander)*
[illegible] 1957	H. F. [illegible], by direction

(opl) (o) /12/ opl

FILE COPY
DICTATED
TYPED
ASST DISTRICT ENGR
ASST DIST ENGR
EXECUTIVE
EXEC ASST
SP ASST A F
SP ASST ARMY
ASST COMPT
AUDIT
BUDGET & ACCT
MANAGEMENT
PROPERTY
LEGAL
OFFICE SERVICE
PERSONNEL
TECH LIAISON
SAFETY
REAL ESTATE
SECURITY
CONSTRUCTION
ENGINEERING
SUPPLY
RESIDENT ENGR
MAIL & RECORDS 5
COORDINATE

NPA FF-171
3 FEB 1955

REGISTERED MAIL

EXHIBIT 41 ✓
Page 24

Permits

NPAHO

22 JAN 1957

Mr. Sam Newman
226 Willoughby Avenue
Juneau, Alaska

Dear Sir:

A report has been received in this office from the 17th Coast Guard to the effect that on 26 December 1956 you were apprehended in the act of discharging oil from the vessel the GINGER N into the Juneau Small Boat Harbor.

It is a violation of law to discharge or permit the discharge of oil by any method or means into the coastal navigable waters of the United States from any vessel.

Section 4 of the Oil Pollution Act of 1924 provides that any person who violates section 3 of that act is guilty of a misdemeanor, and upon conviction shall be punished by a fine, not exceeding $2,500 nor less than $500, or by imprisonment not exceeding one year nor less than 30 days, or by both such fine and imprisonment, for each offense. Any vessel from which oil is discharged in violation of section 3 of the act is liable for the pecuniary penalty specified, and clearance of such vessel from a port of the United States may be withheld until the penalty is paid. Such penalty may constitute a lien on the vessel.

The report of the violation has been forwarded to higher authority.

Very truly yours,

cc Permits

F. V. KIEFFER, JR.
Colonel, CE
District Engineer

009544

PPP-USARAL 4213-56

EXHIBIT 41
Page 25

CORPS OF ENGINEERS, U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
ALASKA DISTRICT
Anchorage, Alaska

ADDRESS REPLY TO
THE DISTRICT ENGINEER
(NOT TO INDIVIDUALS)

REFER TO FILE NO. NPAHO

18 JAN 1957

NPD 800.224 (ALASKA) 1

SUBJECT: Violation of Oil Pollution Act of 1924

TO: Division Engineer
North Pacific Division
Portland 9, Oregon

4237.35

1. In accordance with paragraph 4237.07 d and e, violation of Section 3 of the Oil Pollution Act of 1924 by Mr. Sam Newman of Juneau, Alaska is hereby reported.

2. In conformance with instructions of the Acting Commandant of the Coast Guard, the 17th Coast Guard District reported that at 1700 on 26 December 1956, Mr. John Gallagher noticed oil on the water near the No. 1 float in the Juneau Small Boat Harbor. He proceeded to USCG vessel 95301 and reported the presence of the oil to William L. Lett, BMI. Following an examination of the area, it was determined that the oil was discharged from the fishing vessel GINGER N by Mr. Sam Newman. In reply to inquiries, Mr. Newman admitted that he had drained his stove oil into the bilge and then pumped it into the harbor. Mr. Gallagher returned to his vessel FORRESTER and attempted to pump the oil out of the small boat harbor. Mr. Newman secured his boat and went home.

3. Both the Harbormaster and the Juneau Fire Department were notified of the spill. A sample of the spill was taken from along side the GINGER N and from the discharge hose from the bilge pump and forwarded to this office as evidence.

4. When reviewed by the Investigating Officer, Mr. Newman stated that he had drained approximately 2 gallons of stove oil into the bilge as it contained water. The bilge water level threatened his engine and he pumped the bilge overboard in an effort to save his engine.

5. The Investigating Officer reported that by the time he arrived on the scene the oil had spread over a considerable part of the small boat harbor, but due to the darkness, the exact extent of the spill could not be observed. However, it appeared to be appreciably more than the two gallons admitted by Mr. Newman.

NPAHO
SUBJECT: Violation of Oil Pollution Act of 1924

6. Because of the serious consequences that might have resulted from this violation, the report is submitted for your information. However, since the violation was one of carelessness rather than willful neglect, prosecution is not recommended. Mr. Newman has been informed of the consequences of the violation. A copy of this letter is inclosed for your information along with a copy of the report submitted by the U. S. Coast Guard.

FOR THE DISTRICT ENGINEER:

009417

W. C. Gribble Jr.

2 Incl(in trip)
  1. USCG Report
  2. Ltr to Newman

W. C. GRIBBLE, JR.
Lt Colonel, CE
Executive

NPDKO (18 Jan 57 - NPA to NPD) 1st Ind
NPD 800.224 - Alaska - 1
SUBJECT: Violation of Oil Pollution Act of 1924

Ofc, Div Engr, NPD, CE, 210 Custom House, Portland, Oreg., 22 Jan 57

TO: District Engineer, Alaska District, Anchorage, Alaska

The recommendation contained in paragraph 6 of the basic letter is approved.

FOR THE DIVISION ENGINEER:

Richard F. Ebbs

2 Incl
  n/c
  1 cy ea w/d

RICHARD F. EBBS
Colonel, Corps of Engineers
Assistant Division Engineer

9391

297

22

EXHIBIT 41
Page 27

TREASURY DEPARTMENT
U. S. COAST GUARD
CG-3639 *(10-55)*

OIL POLLUTION

(Report *of discharge of oil, oily bilge and ballast water into navigable water or within 50 miles of the coast of the United States)*

REPORTING UNIT: 17th Coast Guard District
CG DISTRICT: 17
DATE OF REPORT: 6 July 1956

SECTION I—VESSEL DATA

1. NAME OF VESSEL: SS CHILKOOT
2. OFFICIAL NUMBER: 176832
3. NATIONALITY: Canadian
4. HOME PORT: Vancouver, B. C.
5. INTERNATIONAL CALL: V X Y F
6. TYPE OF VESSEL: ☒ DRY CARGO ☐ TANKER ☐ OTHER *(Specify)*
7. TYPE OF PROPULSION: Steam
8. OTHER IDENTIFYING INFORMATION *(If available)*: 1336 gross tons   length 219 feet

9. OWNER(S) *(Name and address)*:
Union Steamships Limited
Foot of Carrall Street
Vancouver, 4, B. C.

10. LOCAL AGENT(S) *(Name and address if applicable)*: None

11. MASTER NAME AND ADDRESS *(If available)*	LICENSE NO.	12. CHIEF ENGINEER NAME AND ADDRESS *(If available)*	LICENSE NO.
Captain Swank	-----	-------------------	------

SECTION II—POLLUTION DATA

1. PERSON REPORTING POLLUTION *(Name and address if available)*:
Mr. Clancy Henkins
Box 1245
Douglas, Alaska

2. WITNESS *(Name and address if available)*:
Mr. Richard Doehl, 1st St., Douglas, Alaska & Mr. Dota Brown, Box 1201
Douglas, Alaska

3. SIGNED STATEMENT ATTACHED *(Check)*: ☒ YES ☐ NO

4. PLACE OF POLLUTION *(Local name or geographic coordinates)*: Taku Point, Taku Inlet, Alaska
5. TIME: 2015
6. DATE: 27 June 1956
7. PHOTOGRAPH ATTACHED: ☐ YES ☒ NO

8. OPERATING PERSONNEL INVOLVED	9. DUTY ON VESSEL *(If available)*	10. LICENSE NUMBER *(If available)*	11. SIGNED STATEMENT ATTACHED YES	NO

12. CAUSES OF POLLUTION *(Explain in "Remarks")*

PERSONNEL FAILURE *(Incompetency, willful disregard of law, carelessness, etc.)* ☐ YES ☐ NO
EQUIPMENT FAILURE ☐ YES ☐ NO
TYPE OF LICENSE OR CERTIFICATES HELD BY PERSON *(If applicable)*:

13. VIOLATION OF OIL POLLUTION ACT, 1924 ☒ YES ☐ NO
14. ON GREAT LAKES, VIOLATION OF REFUSE ACT, 1899 ☐ YES ☐ NO

15. EMERGENCY MEASURES TAKEN TO REDUCE FIRE HAZARDS:
None

SECTION III—OIL POLLUTION SAMPLES

When samples of pollution to be used as evidence are taken from on board a vessel and from the water, the following information shall be filled in and also put on the labels of the samples.

1. SOURCES A. B.
2. TIME A. B.
3. DATES A. B.
4. NAME OF PERSON(S) TAKING SAMPLES
5. WITNESS(ES) TO TAKING SAMPLES

298<

10725 TREASURY, USCGHQ, WASH.,D.C.

REMARKS *(Including attitude of personnel and cooperation received)*

The violation was reported by Mr. Clancy Henkins and Mr. Pota Brown who were fishing in the vicinity. Mr. Henkins observed the CHILKOOT actually discharge the oil. Mr. Brown saw only the resulting oil slick. Oil was described as very thick and extremely difficult to remove from contaminated fishing nets. The oil was discharged on an ebb tide where it drifted into the Taku fishing fleet. No personnel of the CHILKOOT were contacted as the vessel had sailed by the time the spill was reported.

INVESTIGATING OFFICER *(Typed name, and rank or rate)* A. H. CLOUGH, LT, USCG	**SIGNATURE** *(Investigating Officer)* AHClough

FIRST ENDORSEMENT

DATE	**SIGNATURE** *(Unit Commanding Officer)*

SECOND ENDORSEMENT

DATE	**SIGNATURE** *(District Commander)*

EXHIBIT 41
Page 29

V

UNION STEAMSHIPS LIMITED

ALL COMMUNICATIONS
TO BE ADDRESSED TO THE
GENERAL MANAGER

ESTABLISHED
1889

HEAD OFFICE AND PIER
FOOT OF CARRALL ST.
VANCOUVER 4, CANADA
TELEPHONE PACIFIC 3411

CONSTRUCTION

Permits

August 16, 1956

The District Engineer
Corps of Engineers, U.S. Army
Alaska District
Anchorage, Alaska

Dear Sir:

Ref. File No. NPAHO 001222. Permits

We wish to acknowledge receipt of your registered letter of July 27, 1956, wherein you state that the vessel CHILKOOT discharged some oil into Taku Inlet on June 27.

This matter has been fully investigated by the Company, and we find that this was not a wilful act but rather an accidental one. The circumstances of the case were briefly as follows - that the engineer was pumping out his fuel oil settling tank while, unbeknown to him, a by-pass valve became stuck, thus diverting the flow of oil onto the deck of the CHILKOOT and some oil did drain through the scuppers over the side and into the water. As soon as this was noticed, all scuppers on deck were plugged and the oil was mopped up on deck. The broken valve has since been replaced.

We have already been in communication with the 17th Coast Guard District, Juneau, in connection with this matter.

We appreciate your bringing this to our attention, and we also would like you to know that those concerned on the s.s. CHILKOOT have been instructed as to the laws of the United States concerning discharge of oil into navigable waters.

Yours very truly,

J Foster

300<

2743

J. S. Foster
Marine Superintendent

JSF:NP

EXHIBIT 41
Page 30

UNITED STATES COAST GUARD

ADDRESS REPLY TO:
COMMANDER
17th COAST GUARD DISTRICT
P. O. BOX 2831
JUNEAU, ALASKA

6 July 1956
A17
Serial No. 1125

District Engineer
Corps of Engineers
Alaska District
Anchorage, Alaska

Dear Sir:

A violation of the Oil Pollution Act of 1924 by the SS CHILKOOT has been reported to this office. This report is forwarded for such action and disposition as you deem appropriate.

Since Mr. Clancy Henkins furnished the information some time after the occurrence of the alleged violation, it was not possible to obtain oil samples.

For future planning purposes, and for the purpose of the fullest cooperation practicable, it is requested you inform this office as to the type and amount of evidence, oil samples, etc., you may need for successful prosecution.

Very truly yours,

H. F. Stolfi

H. F. STOLFI
Captain, U. S. Coast Guard
Chief, Operations Division
17th Coast Guard District
By direction District Commander

545

Encl: (1) Copy of report, Form CG-3639.

25

EXHIBIT 41
Page 31
JUL 6 1956

Statement of Mr. Clancy Henkins

About 8:15 p.m. I was fishing in Taku Inlet on Wednesday, 27 June 1956. About 1/4th mile off Taku Point, the Canadian vessel CHILKOOT was discharging cargo to a barge alongside. I was streaming my net for fishing just astern of the barge when I first saw the oil slick. I passed close astern of the barge and the CHILKOOT. I saw oil being pumped in a steady stream from the port quarter of the CHILKOOT. Heavy oil mixed with water was being discharged. Possibly it came from the bilges of the CHILKOOT. The pumping lasted about 20 minutes. An oil slick about one half a mile long and 20 to 40 feet wide resulted. I managed to keep my net clear of the oil. However, the oil slick did foul the nets of three or four other fishermen later that night. Richard Boehl was with me and also saw the CHILKOOT discharge the oil.

CLANCY HENKINS

EXHIBIT 41
Page 32

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

ADDRESS ONLY THE
REGIONAL DIRECTOR

730 N. E. PACIFIC STREET
P. O. BOX 3737
PORTLAND, OREGON 97208

R - ALEUTIANS
Gen.

January 11, 1967

Mr. Jack E. Sceva, Senior Geologist
Pacific Northwest Water Laboratory
Federal Water Pollution Control
200 South 35th Street
Corvallis, Oregon 97330

Dear Mr. Sceva:

Attached are copies of correspondence regarding oil pollution in Alaska as the result of the wreck of the EKATERINA G. While this does not show that action has been taken to destroy the vessel and eliminate the oil contamination, this has either been done or is imminent.

We hope this information meets your needs.

Sincerely yours,

John D. Findlay
Associate Regional Director

Attachments

Rec'd 1/18/67
AWL

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON, D.C. 20240

J-66-1109.21

NOV 18 1966

Memorandum

TO: Acting Regional Solicitor, Anchorage

FROM: Acting Associate Solicitor, Division of Water Resources and Procurement

SUBJECT: EKATERINI G, Oil leakage—Destruction of vessel

This is in response to your request of October 21, 1966, to secure action through the Navy Department for the destruction of the abandoned vessel EKATERINI G, which has run aground on Great Sitkin Island, Alaska, and from which the leakage of oil presents a threat to wildlife and to fish.

On February 7, 1966, Mr. Vance, the Deputy Secretary of Defense indicated that the Navy proposes to drop explosives on the vessel, and that the Chief of the Division of Public Health, Department of Health and Welfare, state of Alaska, would authorize such action to be taken. (Please see attached copies of correspondence between Secretary Udall and Deputy Secretary Vance.)

We have been advised by the Fleet Operations Section of Naval Operations, Washington, that the action referred to by Mr. Vance would be taken upon their receipt of the authorization to take necessary action from the Alaska state health authority.

Accordingly, we suggest that you request the Chief of the Division of Public Health, Department of Health and Welfare, state of Alaska to forward a letter of such authorization to Mr. Cyrus Vance, Deputy Secretary, Department of Defense, Washington, D. C., and to forward copies of such letter to: Chief of Naval Operations (OP 33), United States Navy, Washington, D. C.; Ships Systems Command Headquarters (Superintendent of Salvage) United States Navy, Washington, D. C.; The Judge Advocate General, United States Navy, Washington, D. C.; and to Commander Atkins, Fleet Operations, Naval Operations, United States Navy, Washington, D. C.

If we can be of any further assistance in this matter please advise us.

Please keep us advised of further developments in this matter.

Raymond C. Coulter

Acting Associate Solicitor
Water Resources and Procurement

Enclosure

cc:
Mr. W.E. Ackerknecht (FSF, Rm. 2343)
DASchuenke:wpw 11/16/66

EXHIBIT 41
Page 34

R Aleutians
gen

DIVISION OF WILDLIFE REFUGES

May 4, 1966

Mr. Ted Ferris
U. S. Public Health Service
Water Supply and Pollution
  Control Program
Pittock Block
Portland, Oregon

Dear Mr. Ferris:

In several recent telephone discussions with Mr. Russell of this office, you expressed concern over the oil pollution resulting from the wreck of the Greek vessel EKATERINI G. off Great Sitkin Island. We understand your agency has been in contact with the legal counsel for the Corps of Engineers and believe the Corps may be able to take action toward destruction of the wreck and elimination of the pollution problem.

As evidence of the gravity of this problem you asked Mr. Russell for correspondence from our files describing the situation and the resulting hazard to wildlife, particularly sea otters. It is our understanding you propose to transmit this correspondence, along with your recommendations for destruction of the wreck, to the Corps of Engineers. We believe the attached copies will meet your needs.

Your interest is very much appreciated and we sincerely hope your efforts will meet with success. If we can be of any further help, please let us know.

Sincerely yours,

ORIGINAL SIGNED BY
JOHN D. FINDLAY

John D. Findlay
Associate Regional Director

Attachments -
Comm. Browning, Alaska, to Mr. Findlay - 3/21/66
Telegram - Mr. Findlay to Amos Alter, Alaska - 3/9/66
Office of Sec. of Defense to Sec. Udall - 2/9/66
Sec. McNamara, Defense Dept. from Sec. Udall - 1/21/66

RFRussell:cm

EXHIBIT 41
Page 35

R-Aleutians
Wreck-Ekaterini

FSF

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

1. ✓ [illegible] 121 BSQ
Asst. RD-CS /
Asst. RD-ARS
Comm. Ed.
JCCC
2. ✗ [illegible]

JAN 21 1966

Dear Mr. Secretary:

I desire to bring to your attention a situation that is of serious concern to this Department for which prompt remedial action is imperative.

On October 26, 1965, the Greek vessel EKATERINI G. was wrecked on Great Sitkin Island, one of the islands within the Aleutian Islands National Wildlife Refuge. The ship was cast ashore when it broke loose from a Navy tug in Kuluk Bay during an 85-knot gale.

This Liberty ship of approximately 8,000 tons was carrying at the time 6,676 barrels of fuel oil in a double bottom. When the ship was cast ashore, the outer skin was breached, resulting in a continuous discharge of oil into the sea.

The general area of the wreck has been the scene of a rapidly expanding population of sea otters, a mammal that has commanded great public attention in recent years due to its spectacular restoration from near extinction. During a recent survey, some 1,800 of these valuable mammals were recorded within the Great Sitkin, Kagalaska, Little Tanaga, Umak, Chugul, and Tagalak group of islands within a radius of 20 miles of the wreck. The continuous discharge of fuel oil from the wreck is a serious peril to the survival of these sea otter and hence of major concern to us. Should this ship continue to discharge oil over a prolonged period, it could also pose a threat and inhibit the eastward shift and growth of the otter populations in the Atka and Amlia areas. Presumably birds and marine life would also be adversely affected.

We understand that the United States Maritime Commission has authorized the owners to abandon the ship in accordance with the existing maritime law. We further understand that on December 29, 1965, the Global Chartering & Brokerage, Inc., of New York City, agents and insurors for the owner, notified the Department of the Army that all right, title and claim to the vessel and its cargo was relinquished and that in accordance with existing Federal law, the Chief of Engineers of the Department of the Army was authorized to salvage, burn or otherwise dispose of the vessel and its cargo.

Because of the continuing threat to the wildlife and fishery resources of this important National Wildlife Refuge, we hope prompt action can be taken to eliminate this hazard.

Sincerely yours,

(SGD) STEWART L. UDALL

Secretary of the Interior

Honorable Robert S. McNamara
Secretary of Defense
Washington, D. C. 20301

√ cc:
Regional Director, Portland

EXHIBIT 41
Page 37.

13

☑ Assoc. RD
☐ FH
☐ M&E
☐ Realty
☒ ~~Refuges~~

R-Aleutian
gw

DEC 21 1965

Director

Assistant Chief, Division of Wildlife Refuges

Aleutian Islands Refuge--wreck of EKATERINI G. on Great Sitkin Island

Mr. Findlay's memorandum of November 30 transmitted correspondence from Associate Supervisor Spencer. Mr. Spencer's memorandum recommended contacting the New York agent of the ship owner, the Global Charter Corporation, 20 Broadway, New York, N. Y.

In attempting to contact the above agent we finally reached the Global Chartering & Brokerage, Inc., at 29 Broadway in New York, phone number WH-3-7733. Mr. Nelson, representative of the company, indicated that it would be impossible to refloat the ship as it was completely stranded on high ground. The Navy group in the Pacific had estimated a cost of approximately $280,000.00 to refloat the ship whereas Mr. Nelson indicated it had a value on the West Coast of only about $50,000.00.

With the permission of the owner, Mr. Nelson indicated that his corporation was attempting to secure from the Maritime Commission authorization for the abandonment of the boat to the Corps of Engineers of the Department of the Army. He indicated that the matter was under study by the Maritime Commission at the present time and that he expected an answer from them within a few days.

As I understand it, once the Maritime Commission has approved the abandonment of boat to the Corps of Engineers it will be the responsibility of the Corps to take appropriate disposal action.

Mr. Nelson agreed to advise me when he had word from the Maritime Commission. At that time it appears we should use all possible influence on the Corps of Engineers to destroy by burning or otherwise all the oil in the holds of the ship.

(SGD.) WILLIAM E. ACKERKNECHT

W. E. Ackerknecht

cc:
✓ Regional Director, Portland

EXHIBIT 41
Page 38

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27
5010-107

UNITED STATES GOVERNMENT

Memorandum

✓	Assoc. RD
	FH
	[illegible]
	[illegible]
X	Refuges

TO : Regional Supervisor, Division of Refuges, BSFW, Portland, Oregon

DATE: November 23, 1965

FROM : Associate Supervisor, Wildlife Refuges, BSFW, Kenai, Alaska

SUBJECT: Wreck of EKATERINI G. on Great Sitkin

The U.S. Coast Guard at Juneau advises that the EKATERINI G. has Pireus, Greece, as a port of registry. The New York agent who would handle contracts, insurance and salvage is Global Charter Corporation, 20 Broadway, New York, N.Y. Ownership is probably Importers Shipping Corporation.

Commander Bray, Executive Officer of the Adak Naval Station, advises that the ship is a derelict and that the Navy has removed the owners' effects. He believes that the owners have no interest in salvage and that no interest has been expressed by other salvage firms. He offers the opinion that salvage would be hazardous and expensive. Surf is said to be severe on this beach. Judging from the exposure, I would guess that the surf might abate under certain wind conditions.

Fuel is reportedly carried in 3-4 bilge tanks; the forward one rupturing on impact. Perhaps there is some means to pump the oil out. There are huge fuel storage tanks on Great Sitkin about 4-5 miles from the wreck (Fox Creek). These may offer a possibility. It may be possible to burn the oil within the ship at a low cost. At any rate, it is a job for a salvage engineer to figure out the possibilities.

This is one of those hazy, remote situations where corrective action is elusive or impossible. I doubt that we could develop a clear-cut case of wildlife damage, and if we did, it would then be an accomplished fact and too late for correction. Neither the Alaska Department of Fish and Game nor this Bureau could get further significant information in the area without a relatively costly, expedition type effort.

As Commander Raumer, U.S.C.G. suggested, I think, as a preliminary step, we might contact the agent - Global Charter Corporation, explain the problem, the nature of the hazard and obtain their reaction. Following this, it may be possible to have a Navy salvage engineer make an appraisal of disposal possibilities.

DLSpencer
David L. Spencer

cc: Refuge Manager Jones, BSFW, Cold Bay

CO w/memo of 11/30/65

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

EXHIBIT 41
Page 39

1- Mr. Finlay 1.57
X 2. Refuges.

R-Alaska gen

Associate Supervisor, Wildlife Refuges
Kenai, Alaska

November 17, 1965

Regional Supervisor, Division of Refuges
Portland, Oregon

Wreck of EKATERINI G. on Great Sitkin

Your memorandum of November 12 conveying the information on the wreck of the oil tanker and the potential hazard it now presents to the sea otter has been received and we are referring the matter to our Washington Office for any action they may be able to take.

In the meantime we would like further information from you as to the registry and ownership of the vessel, if you can supply it, together with any suggestions you may have as to removal or mitigation of the hazard.

Original signed by
VERNON EKEDAHL

Vernon Ekedahl

Attachment - memo to CO

VEkedahl:cm

EXHIBIT 41
Page 40

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27
5010-107

UNITED STATES GOVERNMENT

Memorandum

Assoc. RD
FI
M&E
Realty
Refuges
150
18

TO : Regional Director, BSFW, Portland, Oregon

AL 3328
DATE: November 12, 1965

FROM : Associate Supervisor, Wildlife Refuges, BSFW, Kenai, Alaska

SUBJECT: Wreck of EKATERINI G. on Great Sitkin

A Greek vessel, the EKATERINI G. was wrecked on Great Sitkin Island in early a.m. on October 26. While at Adak we interviewed members of the crew and later made reconnaissance flights to appraise the probable effect on sea otter of oil discharged from the vessel.

The ship broke loose from a Navy tug in Kuluk Bay in 85-knot winds. It was cast ashore on the west side of Great Sitkin Island (Glacier Creek) with only minor damage. The vessel was a liberty ship of 7,951 tons, 441 feet in length, built in 1944.

The crew advised that she carried 6,676 barrels of fuel oil in a double bottom. The outer skin had breached, resulting in a continual discharge of oil.

This general area is currently the location of a rapid sea otter population extension from west to east. On April 25, 1965 our survey recorded approximately 1,800 otter within the Great Sitkin, Kagalaska, Little Tanaga, Umak, Chugul, Tagalak group of islands within a radius of roughly 20 miles of the wreck. Considering the disastrous effect of oil on sea otter survival we are thus seriously concerned.

On short reconnaissance flights October 28 & 29, 1965, under less than satisfactory survey conditions, oil streamers were noted by Cape Kiugilak, Sand Bay and Great Sitkin Pass. Very few otter were noted although we had recorded about 600 in this area in April of 1965. No dead animals were observed on beaches. On November 8, with a south wind, continuing oil discharge was noted from the vessel into Kuluk Bay and traces of oil were noted on the water in Sand Bay, Great Sitkin Pass, Asuksak Pass and Igitkin Pass. A cursory survey through Great Sitkin Pass, Yoke Bay, Chugul Pass, Umak Pass, Little Tanaga Strait and Kagalaska Strait resulted in a tally of about 700 sea otter.

We believe the ship may discharge oil over a prolonged period, perhaps several years. If so, there is a strong possibility that sea otter populations in this area may suffer substantial mortality. This in turn would inhibit the eastward shift and growth of sea otter populations in the Atka and Amlia areas. Presumably birds and marine life would also be adversely affected.

311

cc-Central office 11/15/65

Detailed evaluation of this problem would require extended investigations with the use of a boat.

Although salvage considerations are not known, possibilities seem poor. The crew was of the opinion that salvage costs might exceed the value of the vessel, which they estimated at $60,000.

DLSpencer
David L. Spencer

cc: Commissioner, ADF&G, Juneau
Refuge Manager, Cold Bay
Karl Kenyon, Seattle

EXHIBIT 42
Page 1

Oil and Refuse Pollution Report[88]
State of Alaska

EXHIBIT 42
Page 2

THE POLLUTION PROBLEMS

As a country develops, its population and business growths are closely paralleled by the growth of those factors which tend to increase potential pollution hazards of inland and coastal waterways. And during this period of development the same waterways are being used by an increasing number of people for both commercial and recreational purposes.

There exists a mistaken idea that due to the motion of tidal currents and the mobile nature of water the dumping of refuse is inconsequential. Unfortunately, this is not the case. Oil, for example, spreads rapidly over wide areas due to winds and ocean currents. Refuse, oil, and all other objectionable materials discharged into harbors have little chance of being carried out to sea and, unless cleaned up promptly, will spread about the harbor and eventually cling to boats, accumulate in slips, or wash up on the harbor shores, thus creating a great nuisance, in addition to causing unnecessarily large expenditure of funds for their removal.

Floating timber and debris also constitute a constant danger to small craft and seaplane operations, often resulting in the loss of craft as well as lives. Material that does escape out of the harbor entrance may drift about for a time, but will eventually be deposited on the adjacent beaches. Unless refuse other than oil is dumped outside the 20 mile limit, and oil and other petroleum products beyond the 50 mile limit, wind and ocean currents will usually cause their return to our coastal and inland waters, or upon the beaches.

EXHIBIT 42
Page 3

Within harbor areas, pollution creates an unsanitary, unsightly and unpleasant condition, and in most instances, a serious fire hazard. Gases released by decaying refuse have a deleterious effect on paint and hulls of vessels and other metal objects, and is decidedly offensive to the sense of smell. Oil discolors paint and necessitates frequent cleaning or repainting of ships' hulls. It also causes wholesale wanton destruction of sea birds by fouling their plumage and ability to fly, and an adverse, and often fatal, effect on fish life. Beaches are rendered useless and, if oil is present, an extremely aggravating nuisance is created.

The principal sources of pollution, not necessarily listed in order of magnitude of violations have been: domestic sewage, industrial or commercial waste, and waste or spillage from ships. Completion of statewide sanitation investigations, construction of proposed refuse and sewage treatment plants, and rigid adherence to laws and regulations prescribing the issuance of Health and Welfare Department permits will eliminate almost all pollution from the first two named sources. Pollution from vessels could be greatly reduced if crews would familiarize themselves with ships' rules and orders and obey them.

Generally, violations of pollution laws can be grouped into three types: accidental, willful, or deliberate, or a result of negligence

In most accidental cases the parties concerned are familiar with the oil and refuse pollution laws and penalties and take immediate steps to clean the polluted area, in many cases at large expense. The accidental type is difficult to prevent; however, the use of adequate equipment, its careful inspection, the institution and constant use of proper procedure, and necessary training would greatly reduce the number and extent of violations.

The dumping of garbage and other refuse or waste, the disposal of sewage, and the discharge of oily bilge or ballast water into navigable waters is generally deliberate and can be readily avoided if the laws are obeyed. Violations involving deliberate action will be prosecuted to the full extent of the law.

The remainder of the cases, which constitute the greatest number, are generally attributed to negligence, although the facts sometimes border close to being deliberate. Repeated or flagrant negligence or carelessness will be prosecuted without leniency to the full extent of the law. A typical case of negligence would be the spilling of oil through improperly plugged scuppers while loading or unloading vessels. However, neither carelessness nor thoughtlessness can exempt any person, member of a crew, or an employer, from responsibility in connection with violation of the pollution laws or from personal arrest and fine in Federal and/or State courts.

JURISDICTION OF THE DEPARTMENT OF THE ARMY

The jurisdiction of the Department of the Army, through the Corps of Engineers, is limited in actual enforcement to such control as is necessary to prevent any act in which the public right of navigation may be impeded or obstructed; however, far broader interpretations of the laws have been rendered by the Federal Court in the interest of preserving navigable waters for maximum use by the general public for business, recreation or other purposes.

The various state and local laws of Alaska provide penalties for violations against conservation of wildlife, sanitation, or public health.

The following definitions as to what determines "navigable waters" are based on court decisions:

"A stream (or any body of water) is navigable in law when it is navigable in fact, and it is navigable in fact when it is used, or is susceptible of being used, in its natural or improved condition, as a highway for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water."

"The capability of use by the public for purposes of transportation and commerce affords the true criterion of the navigability of a river (or body of water), rather than the extent and manner of that use."

"If it is capable in its natural state of being used for purposes of commerce, no matter in what mode the commerce may be conducted, it is navigable in fact, and becomes in law a public river or highway."

EXHIBIT 42
Page 6

"Navigability, in the sense of the law, is not destroyed because the watercourse is interrupted by occasional natural obstructions or portages; nor need the navigation be open at all seasons of the year, or at all stages of the water."

Therefore, Federal laws extend to all navigable waters below the highwater mark, whether tidal or non-tidal. The deposit of material on river banks or in branch streams where it is liable to be washed into navigable waters is also encompassed in the law.

It is also the policy of the Department of the Army to include within its jurisdiction the coastal waters of the United States seaward to such distance as may be necessary to effectively protect and preserve the navigability of the waterway. This practice is an assertion of the right of Congress to prohibit the doing of anything which tends to destroy the navigable capacity of any of the waters of the United States.

Experience has dictated that garbage and refuse in general should not be dumped less than 20 miles offshore, whereas oil and similar insoluble floating matter should be disposed beyond a distance of 50 miles from shore.

EXHIBIT 42
Page 7

KINDS OF POLLUTION WITHIN THE JURISDICTION
OF THE DEPARTMENT OF THE ARMY

The kinds of pollution specifically within the jurisdiction of the Corps of Engineers include the depositing into, or the placing in such a way as it may be liable to be washed into or caused to enter the navigable waters, of oil, industrial waste, or debris of any kind, whereby navigation shall or may be impeded or obstructed.

The discharge of ballast or oily bilge waters within a harbor or navigable waterway, or close to shore line when the ship is at sea, is also unlawful.

Some of the common major items, solid or liquid, prohibited by Federal law from being discharged into navigable waters are as follows:

> Manufacturing plant waste, cannery, factory, or mill waste, debris of any kind (especially floating timbers), garbage, raw sewage or solids from sewage treatment plants, earth or any solid substance (soluble or otherwise) ashes, sludge, acid, sump waste, fuel oil, gasoline, or any other petroleum products or carbonaceous material, and contaminated bilge water.

PREVENTION AND REMOVAL OF POLLUTION

To prevent pollution on or near the shore by oil or oily wastes dumped at sea, it is necessary that bilge and ballast water be discharged many miles offshore. The principal oil companies now require their ships' masters to make such discharge not less than fifty miles offshore, and this procedure is advisable in order to avoid pollution of the navigable waters of the United States.

The principal docks for oil tankers are now equipped with filters for reclaiming oil from ballast and bilge water that is pumped ashore from vessels. When in port, these or similar facilities should be used to prevent pollution of the harbor waters.

Before loading or unloading oil or other petroleum products, all scuppers should be closed and sealed with wooden or metal plugs to prevent spills from draining on the harbor waters. Burlap or other porus substance is not an effective plug, as oil will seep through and cause pollution.

Responsible personnel should closely watch the filling of tanks while loading oil to see that no air pockets form and that all pipe lines and connections are secure and safe against probability of surges and accidents. All equipment used should be kept in good condition, and leaks immediately repaired.

In case of an oil spill, immediate steps should be taken to remove the oil from the waters. For small spills, the most convenient utensils at hand may be used to skim the oil from the surface. There is available finely divided carbon coated sand which is claimed to be water repellant, but to have an affinity for oil, which causes oil or any petroleum product to adhere to it and may then be agitated, resulting in the permanent sinking of the oil soaked sand. To remove all the oil completely, several sprayings of sand may be necessary, depending upon thickness of the spill. Other effective means of removing the oil is by the use of burlap, matting, sawdust, or similar absorbent material. When these materials have served their purpose, they may be burned or cleaned with ~~gasoline~~ solvent for further use. For large spills, booms of logs can be used to keep the oil from spreading, and then the oil may be pumped from the water's surface. If oil is spilled and cannot be removed with the means at hand, a ship's service company, that is equipped to remove oil from the water, should be called immediately. Some of the oil companies have shown their interest and cooperation by installing special equipment on their oil-loading docks to confine and remove oil spills.

When in port, ships should arrange to dispose of garbage or refuse ashore or provide receptacles for such purposes until such time as it can be dumped sufficiently far enough offshore to insure that it will not drift into the navigable waters of the United States and ashore. Ocean currents are strong and so variable in course that it has been found necessary to dump garbage and similar waste material not less than twenty miles offshore in order to prevent such pollution.

The problem of eliminating industrial wastes is a matter to be solved by the individual industry concerned. Studies have beem made by State and Federal agencies and by some industries through their group organizations to develop methods of disposal or reprocessing waste in the most economical manner. However, regardless of the economics involved, violations of the pollution laws will not be permitted.

It is therefore suggested that each industry confronted with a disposal problem should make application with the Alaska Department of Health and Welfare for a sewage disposal permit. The issuance of such a State permit is automatically coordinated with the requirements of existing Federal laws.

EXHIBIT 43
Page 1

UNITED STATES DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
Branch of Fishery Management Services
Olympia, Washington

Special Report

Loss of Marine Life on Pacific Beaches of Quinault Indian Reservation and Adjoining Areas, Washington - Incidental to Stranding of Petroleum Barge at Moclips, March 11 to 17, 1964.

April 10, 1964

EXHIBIT 43
Page 2

Special Report
Loss of Marine Life on Pacific Beaches of Quinault Indian Reservation Washington

On the evening of March 11, 1964 while on routine duty on the Quinault Indian Reservation Mr. Heckman observed an oil barge under tow by what appeared to be a U. S. Coast Guard cutter several hundred yards off-shore from Moclips, Washington. A small tug standing by had apparently lost control of the barge when the towline slipped from its winch drum. Strong on-shore winds were blowing and heavy seas existed at the time of this observation. The cutter appeared to be towing the barge away from the beach. However, it lost control during the night due to the severity of the storm, and on the morning of March 12, the barge was found grounded on the beach opposite Moclips.

The barge, owned by United Transportation Company of San Francisco is 200 feet long and contained about 2,300,000 gallons of petroleum products reported to be 70 percent gasoline and 30 percent diesel fuel. The barge has some 24 compartments each with a capacity of 100,000 gallons.

This report concerns the loss of marine life during the period March 12-18, 1964, resulting from the release of petroleum products from the grounded barge. It includes data from surveys and conferences between Mr. Heckman and representatives of State of Washington agencies and the Quinault Indian Tribe. Individuals assisting in surveys and/or contacted and providing data for this report were:

James Jackson, President, Quinault Indian Tribe
W. D. Petit, Conservation Officer, Quinault Indian Tribe
Richard Charley, Patrolman, Quinault Indian Tribe
Donald Kauffman, Research Chief, Washington Dept. of Fisheries
Emanuel LeMier, Biologist, Washington Dept. of Fisheries
Gene Deschamps, Biologist, Washington Dept. of Fisheries
Ray Johnson, Biologist, Washington Dept. of Fisheries
Earl Finn, Biologist, Washington Dept. of Fisheries
D. C. Wells, Biologist, Washington Dept. of Fisheries
Aven Anderson, Biologist, Washington Dept. of Fisheries
Russell Orrell, Biologist, Washington Dept. of Fisheries
Albert Dougherty, Patrol Officer, Washington Dept. of Fisheries
Benny [illegible]tson, Patrol Officer, Washington Dept. of Fisheries
Arthur Watkins, Patrol Officer, Washington Dept. of Fisheries
Ray Morrison, Patrol Officer, Washington Dept. of Fisheries
Stanley F. Knox, Inspector, Washington Pollution Control Commission

Mr. Kauffman first contacted Mr. Heckman on the evening of March 13 and informed him that some mortality to razor clams and other marine life had occurred in the vicinity south of the barge, as a result of the leakage from the barge. Mr. Heckman called Mr. Petit and learned that no mortality had occurred north on the Quinault Indian Reservation Beach.

On the evening of March 14, Mr. Petit informed Mr. Heckman that a heavy kill of clams had occurred, both south of the stranded barge and on the Reservation beach. On March 15 and 16 Petit and Heckman surveyed clam losses on the Reservation beach and took water and clam samples. They conferred with and coordinated their sampling and survey methods with those of the Washington Department of Fisheries and the Washington Pollution Control Commission.

Attempts by salvage workers to secure a tow line from the tug "Sea Witch" to the stranded barge were observed. A strong odor of diesel fuel was noted in the town of Moclips.

The survey of clam mortality by Mr. Heckman included the area from the Indian Reservation boundary south of Moclips River to Point Grenville, approximately 4 1/2 miles north. Sampling stations were located at Moclips River Mouth, Wain Creek approach, Wreck Creek, and at Point Grenville.

Dead and dying razor clams and occasionally horseneck clams were observed at all stations except Point Grenville. Heaviest mortality occurred near the stranded barge and diminished toward Point Grenville. Following are counts of dead and dying clams made at the various sampling stations.

Each count is representative of a beach area 25 feet by 25 feet, centering on the mark of the most recent high tides. Samples of the area between the surf and high tide marks were not taken. Sample plots were selected in a random manner which would make them representative of the general area of each station.

Date	Station	Plot Number	Dead and Dying Clams
March 15	Moclips River	1 (100 yds. So. of River)	12
		2 (200 " " " ")	17
	Wain Creek	1 (100 yds. So. of Creek)	7
		2 (200 " " " ")	9
		3 (300 " " " ")	11
		4 (100 " " " ") (approach to beach)	10
		5 (At approach)	15
		6 (100 yds. No. of approach)	8
		7 (200 yds. No. of approach)	4

EXHIBIT 43
Page 4

Date	Station	Plot Number	Dead and Dying Clams
March 16	Wain Creek	1 (200 yds. So. of approach)	11
		2 (100 yds. So. of approach)	13
		3 (75 yds. No. of approach)	10 (Also 2 horseneck clams)
	Wreck Creek	1 (100 yds. So. of Creek)	8
	Pt. Grenville Approach	1 (300 yds. So. of approach)	2
		2 (200 yds. So. of approach)	0
		3 (100 yds. So. of approach)	1
	Pt. Grenville	No mortality	

It should be clearly understood that the areas sampled were small compared to the total area effected. No attempt was made to estimate the total loss of clams, but it was obvious that it was of major proportions.

At 8:00 pm on March 15 (low tide) sampling of live razor clams was conducted with assistance of Messrs. Petit and Charley. Nine live, and apparently healthy clams were dug. During approximately one hour of observation, and in walking several hundred yards of beach at surf line, only one clam in a state of distress, (neck fully protruded above sand) was observed. No other signs of occurring mortality were seen.

On the afternoon of March 16, efforts to free the barge from the beach appeared to be succeeding. Messenger lines from the tug Sea Witch had been secured to the beach and hauling lines were being pulled onto the barge. Field surveys temporarily were discontinued.

At 6:00 pm on March 16 Mr. Jackson called Mr. Heckman's residence in Olympia and reported that gasoline and diesel fuel was being pumped from the stranded barge into the surf. He said that State agency representatives in Moclips had not given permission and were unsuccessful in attempts to halt the pumping. He requested that Mr. Heckman pursue possibility of Federal action. Mr. Heckman immediately contacted Messrs. Parkhurst and Barnaby by telephone and related the problem. Mr. Barnaby later contacted the U. S. Public Health Service and U. S. Coast Guard. Action by these agencies was initiated; however, primary pumping was discontinued by the salvage crew at about sundown and all workers returned from the barge to the beach. It was estimated that more than 500,000 gallons of fuel consisting mostly of diesel oil was pumped into the surf. The barge was towed from the beach about 2:00 am on the following day, March 18.

Mr. Heckman returned to the Moclips area on the morning of March 18. He noticed a strong smell of diesel fuel about 3 miles inland from the beach. Odor of diesel fuel was extremely strong on beach at Pacific Beach and oil was visible in shallow pools of sea water near the surf. A heavy kill of razor clams south of the location of the stranded barge was noted. Dead and dying clams were thickly scattered along the entire beach area. Numerous dead and distressed sea birds were observed. These included western grebes, surf scoters, white wing scoters, and California murres. In a one mile stretch north of Boone Creek, 45 of these birds were counted. Sea gulls did not appear to be affected.

After a brief inspection of the beach area south of Pacific Beach Mr. Heckman contacted Mr. Jackson, reported by telephone to Mr. Barnaby and then resumed surveys on the Quinault Reservation beaches. No evidence of recent clam mortality was noted anywhere on the Reservation beaches. Interviews with commercial clam diggers and personal inspections of each sampling station were made. Water samples were taken at each station.

Later, on March 18, this most recent clam mortality was discussed at Pacific Beach with Messrs. Kaufman, LeMier and other representatives of the Washington Department of Fisheries and it appeared that this was by far the heaviest loss observed since stranding of the fuel barge. Arrangements were made for exchange of data and analysis of clam and water samples.

Biologists of the Washington Department of Fisheries have continued sampling of clams and observations along the affected beaches since removal of the barge. All clam and water samples collected by Mr. Heckman were provided to the Department of Fisheries for analyses.

The U. S. Coast Guard is conducting hearings in Seattle to determine the cause and responsibility for the barge stranding.

Mortality to razor clams and other marine life was heaviest south of the stranded barge for a distance of 8 to 10 miles. Ocean currents and prevailing winds are southerly in this area. Only one noticeable die-off of clams north of the barge occurred during the time the barge was beached and this was on the evening of March 14. The winds at that time were strong northerly. Evidence of dead razor clams was observed on Quinault Indian Reservation beaches almost to Point Grenville.

The Washington Department of Fisheries closed 8 miles of the beach to both commercial and sport fisheries. The beaches will remain closed until it can be determined whether or not adequate numbers of clams remain for sufficient reproduction.

The heavy mortality of razor clams was a direct waste and loss to the sport and commercial clam industry of the State of Washington. Many of the Quinault Indians on the Reservation depend on razor clams as a source of livelihood, both directly as food and through commercial aspects. Propretors in the affected area which operate facilities to accommodate tourists attracted to the area primarily in pursuit of clams will be affected by the loss for years. Age classes of clams which would support digging for 3 years were seriously depleted. Replenishing of clam populations through natural production will require an undetermined number of years.

Assessment of total loss to the resources will not be determined for some time. It was estimated that several tons of clams were killed. Razor clam mortality south of Copalis River, extending to Grays Harbor, (not shown on attached map), was considerably lighter than on beaches to the north. Losses to marine life as a result of this oil spillage will probably continue for many months and perhaps years to come.

Replenishing of the clam population will be studied and a review of the findings covered in a later review report.

/s/ James L. Heckman
Fishery Management Biologist

Reviewed:

/s/ William M. Morton
Acting Regional Supervisor
Branch of Fishery Mgt. Services

/s/ J. T. Barnaby
Chief, Division of Sport Fisheries

EXHIBIT 43
Page 7

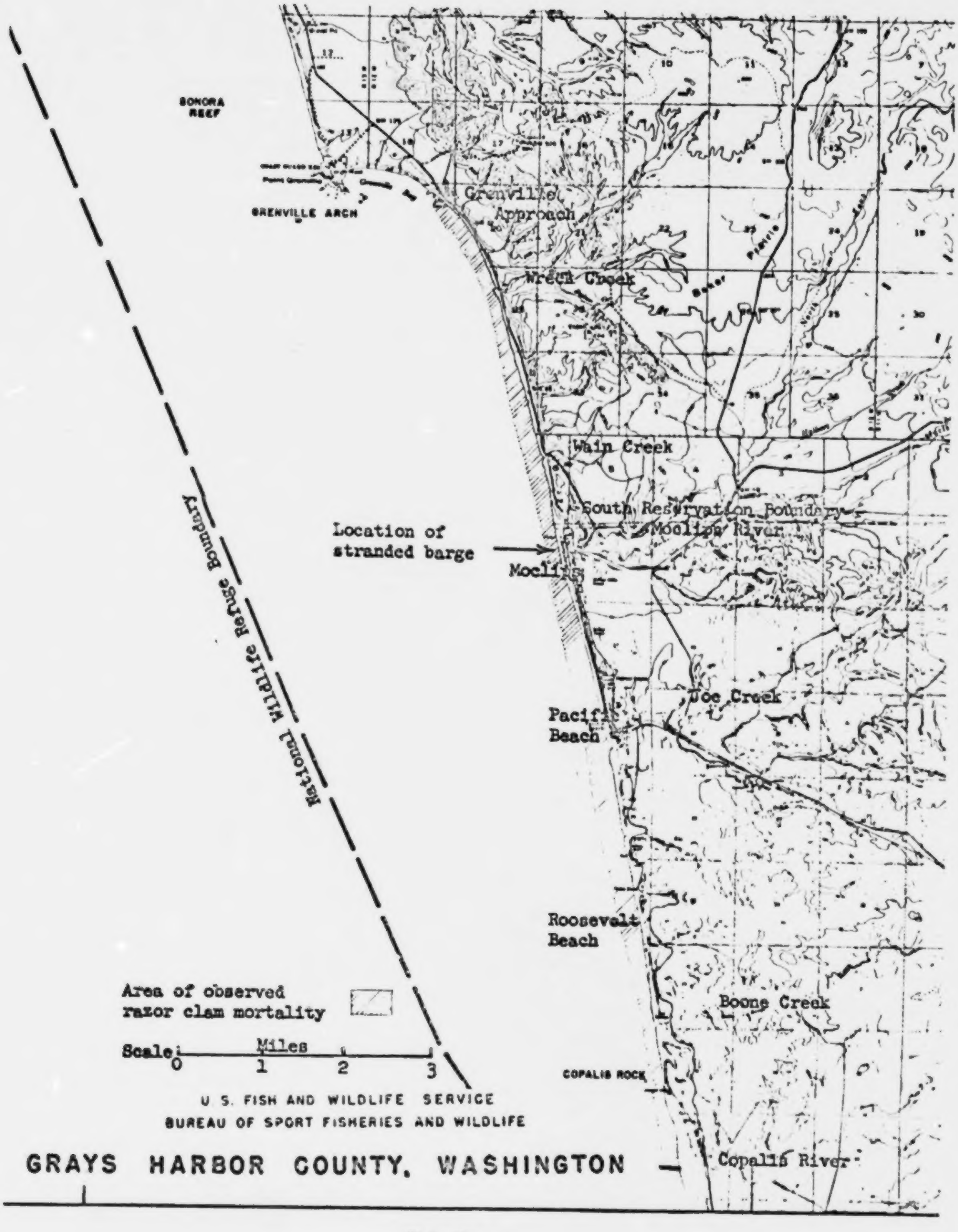
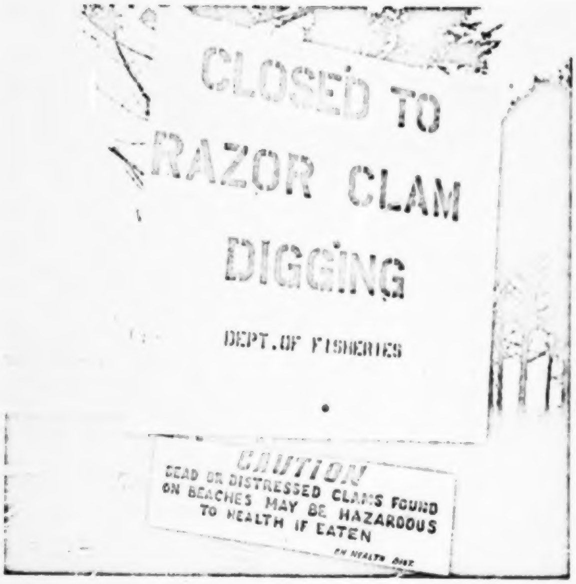

SONORA REEF
GRENVILLE ARCH
Grenville Approach
Wreck Creek
Wain Creek
South Reservation Boundary
Moclips River
Location of stranded barge
Moclips
Joe Creek
Pacific Beach
Roosevelt Beach
Boone Creek
COPALIS ROCK
Copalis River
National Wildlife Refuge Boundary
Area of observed razor clam mortality
Scale: Miles 0 1 2 3
U. S. FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
GRAYS HARBOR COUNTY, WASHINGTON

EXHIBIT 43
Page 8


CLOSED TO
RAZOR CLAM
DIGGING
DEPT. OF FISHERIES
CAUTION
DEAD OR DISTRESSED CLAMS FOUND
ON BEACHES MAY BE HAZARDOUS
TO HEALTH IF EATEN

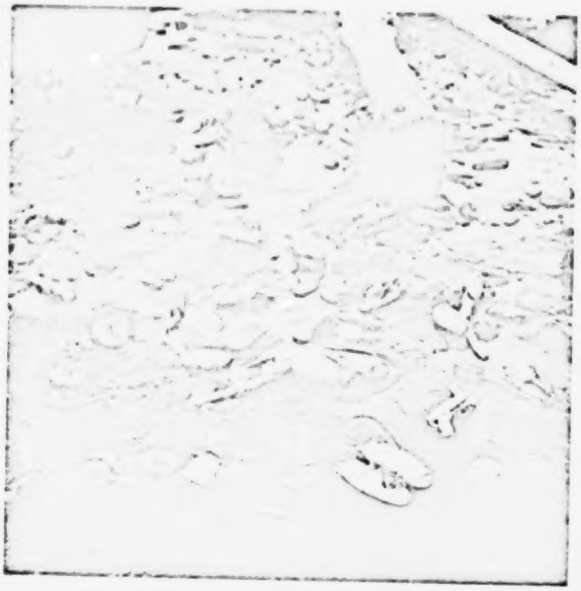
Razor clam digging was closed from Copalis Beach to Joe Creek, a distance of about 10 miles. Area is among the best razor clam digging on the west coast of the conterminous United States.

EXHIBIT 43
Page 9

Dead and distressed waterfowl were numerous along beaches on morning following pumping of fuel from the barge. Action of petroleum products destroyed protection of birds natural body oils and subjected them to drowning or death from exposu to elements and predators. Photo north of Boone Creek, M 1964.

EXHIBIT 43
Page 10

A helicopter was used to transport men and equipment during salvage operations to fuel barge stranded on beach at Moclips, Washington, March 15, 1964.



Razor clams, killed during the night of March 14, were washed in by the surf and observed at the high tide during the following day on the Quinault Indian Reservation. Photo near Wain Creek beach approach, March 15, 1964.

EXHIBIT 43
Page 11

During the evening of March 16 several hundred thousand gallons of diesel oil and gasoline were pumped from the barge into the ocean surf. Large numbers of dead and dying razor clams were observed for several miles south of Moclips. Above photos taken one mile north of Boone Creek, March 17, 1964.

Local crab fishermen salvaged razor clams which were not yet dead in hope they could be used for bait. Photo one mile north of Boone Creek, March 17, 1964.

EXHIBIT 11
Page 1

Engineering Report on the Butterworthing of the "Hawaiian Ranger" at Terminal 4

June 15, 1966

The HAWAIIAN RANGER, owned by Matson Lines, arrived in Portland, Oregon on June 13, 1966 and discharged about 2,800 short tons of molasses to Pacific Molasses Company's storage tanks which are located at Terminal 4. After discharging this weight of molasses, the four molasses tanks were stripped with potable water and the stripping water was pumped ashore and placed in the storage tanks also. After this operation had been completed, it was estimated that 2 to 2½ tons of diluted molasses (stripping water) remained in the ship's tanks. This stripping water was further diluted with about 550 tons of heated Willamette River water.

During the night of June 14-15, this water was sprayed about the tanks, in an operation called butterworthing. Then beginning at 9:45 a.m. and ending at 2:00 p.m. this heated diluted molasses mixture was pumped overboard through a canvas sock into the Willamette River. During this entire operation a large foam blanket formed on the water surface, however, it was noticed that it only took 10 minutes for the foam to completely disappear from the water surface once the waste discharge had been completed.

During this entire discharging operation, samples were taken of the diluted molasses as it came from the tanks, at the canvas sock, and at the stern of the ship. Working with the information gained, and based on discharge standards, it would appear that this waste is far too strong to be discharged to the Willamette River without benefit of proper treatment. It was noticed that a number of the samples taken near the sock contained very high BOD (Biochemical Oxygen Demand) and low DO (Dissolved Oxygen) values. As the waste stream passed the stern of the ship, high BOD and low DO values were again recorded. This was definite evidence that the molasses imposed a high waste loading upon the river in the vicinity of the discharge.

In the light of the above findings, it is felt that unless better control can materially reduce the amount of waste to be discharged to the Willamette River, the Butterworthing in the Portland Harbor should be prohibited, unless it is discharges to a land-based sewer where adequate treatment can be provided.

EXHIBIT 45
Page 1

STATE OF ALASKA

DEPARTMENT OF HEALTH AND WELFARE

WILLIAM A. EGAN, GOVERNOR

327 EAGLE STREET — ANCHORAGE 99501

July 26, 1966

Mr. [illegible]. R. Day
Director
Alaska Water Laboratory
Federal Water Pollution Control Administration
College, Alaska

Attention: Mr. Carl Hadler
Acting Chief
Technical Assistance Program

Gentlemen:

Please consider this letter a formal request for help in determining the extent of water pollution in Cook Inlet and in the harbor adjacent to the City of Kodiak.

There are substantiated reports of petroleum products being introduced into Cook Inlet presumably associated with the oil well drilling activities. There are several drilling platforms located off shore near the West Forelands and there is much drilling activity on both the East and West shores. This type [illegible] King Crab fishing industry and could be and perhaps is adversely effecting one of the mainstays of Alaskan economy. We need to know the extent of and the source or sources of this pollution.

There are approximately twenty million pounds of King Crab shell and waste being discharged into a rather restricted area in the harbor adjacent to the City of Kodiak each year. It appears that the crab fishing industry is growing and the pollution problem is growing proportionately. We need to know the extent and

EXHIBIT 45
Page 2

the amount of the pollution and the possible courses of action to prevent a serious problem from arising.

We will appreciate any help you can give us in these matters and you can be assured of our cooperation.

Very truly yours,

Elizabeth A. Tower M.D.

Elizabeth A. Tower, M.D.
Regional Health Officer

By:

Bruce D. Adams

Bruce D. Adams, Supervisor
Regional Sanitation Services
Division of Public Health

BDA:mjv

EXHIBIT 46
Page 1

Interoffice Memorandum
Department of the Interior
Federal Water Pollution Control Administration 89
June 30, 1966

W. W. Towne, Project Director

D. L. Ross, Sanitary Engineer

Portland Harbor Bottom Sampling Survey Analysis

The bottom samples collected by Eckman dredge were analyzed for combustible organic matter by drying a portion and burning in a muffle furnace to determine percent volatile matter in the dry solids.

Analytical data reported by Columbia Basin Lab:

Station No.	Left	Middle	Right
1	9.0%	3.5%	6.8%
2	8.7	0.9	rocks 1.0 sample exploded
3	6.2	8.0	7.4
4	7.9	bark 11.9	11.1
5	10.2	rocks 7.5 - 0.9	7.6
100 yrds downstream		wood chips 3.0	
300 yrds downstream		6.8	
6	9.2	7.4	6.7
7	9.3	3.2	7.9

In general, the analysis substantiated previous opinion based on observations at time of sampling. Organic matter was approximately 9 percent at stations on the left side except below the storm sewer outfall and the spoil area. Silt in these areas appeared to be deeper and more gelatinous but contained a higher percentage of clay and inorganic matter.

Bark chips and wood debris collected below the dredge and at the edge of the spoil area created a false indication of organic silt where in reality the sample was mostly sand.

Water quality deterioration would be caused by colloidal organic matter and soluble products of decomposition which are present in the fine silt. If the deposits had collected fast enough to prevent oxidation and develop an anaerobic mass, H_2S gas and black, oily, muck would create a serious problem. Sampling of the bottom surface indicated sludge was only a few inches thick and well oxidized to a light gray over most of the harbor. Our sampler was incapable of determining thickness of sludge along the west side but at least the top six inches indicated sludge in this area was deposited slowly and was probably comparatively stable. However, reports from the dredge revealed deep anaerobic sludge below Terminal No. 2 where the river widens and permits more slime to settle.

Estimation of organic matter temporarily suspended by the dredge based on an average cut of 4500 sq. ft. (estimate by Beeman of the Corps of Engineers) per hour, sludge weight 2000 lb/yd, dry solids 30 percent of gross weight, organic content 9 percent, sludge layer 4 inches thick.

$$\frac{4500}{9} \times \frac{4}{36} \times 2000 \times \frac{30}{100} \times \frac{9}{100} = 3{,}000 \text{ lb/hr.}$$

This could release 750 lb. BOD/Hr.

River flow 6,000 cfs = 1,370,000,000 H_2O/hr.

This would result in a DO reduction of less than 0.5 ppm. But if the sludge layer was 2 feet thick as it might be in spots along left bank, then organics would be 18,000 lbs., releasing possibly 5,000 lbs. BOD including sulfides and the DO reduction would be 3.6 ppm.

These estimates are compatible with observed conditions. DO reduction on June 24 (Friday) when the dredge was working in a gravel area was barely detectable. But the previous Wednesday the dredge had been in deep sludge which liberated copious amounts of gas including H_2S and caused a serious depletion of oxygen content. Thursday, June 30, the dredge was making a pass up the west side starting at a point 2,300 feet below Broadway Bridge and again the DO reduction was noticeable.

D. L. Ross

EXHIBIT 47
Page 1

Spoil Areas on Navigation Projects
U. S. Army Engineer District
Portland, Oregon [50]

Project	Average Cu. Yds. Dredged per Yr.[a]	Hopper Dredge Disposal Areas River or Bay[b]	Hopper Dredge Disposal Areas Offshore[b]	Pipeline Disposal Areas On or Near Shore[b]
Col. R-Vanc. to The Dalles	285,164	--	--	14
C&LW (Col. & Lower Will. R.)	12,226,653	24	--	74
MCR (Mouth of Columbia River)	2,410,697	2	3	--
Oregon Slough	63,980	--	--	1
Willamette & Yamhill Rivers	653,279	--	--	45
Clatskanie River	10,846	--	--	1
Westport Slough	45,596	--	--	1
Skipanon Channel	29,484	--	--	6
Tillamook Bay & Bar	50,838	1	1	--
Depoe Bay	158 [c]	--	--	1
Yaquina Bay & Harbor	195,712	1	1	--
Siuslaw River	100,174	2	1	--
Yaquina River	12,228	--	--	6
Smith River	8,736	--	--	1
Umpqua River	329,033	3	1	--

a = FY 1962 - 1966
b = Typical year - total number of areas may be greater
c = Rock

EXHIBIT 47
Page 2

Project	Average Cu. Yds. Dredged per Yr.[a]	Hopper Dredge Disposal Areas River or Bay[b]	Hopper Dredge Disposal Areas Offshore[b]	Pipeline Disposal Areas On or Near Shore[b]
Coos Bay	1,845,618	5	1	2
Coos-Millicoma Rivers	24,897[c]	--	--	3
Coquille River	67,944	--	1	--
Rogue River	205,703	--	1	1
Chetco River	10,246	--	--	1
Lewis River	38,102	--	--	3
Cowlitz River	16,928	--	--	4
Elokomin Slough	5,240	--	--	1
Skamokawa Creek	3,094	--	--	1
Deep River	6,894	--	--	1
Col. R. at Chinook	53,840	--	--	1
Col. R. at Baker Bay	125,321	1	--	4

a = FY 1962 - 1966
b = Typical Year - total number of areas may be greater
c = Rock

EXHIBIT 48
Page 1

Dredging Schedule
U. S. Army Engineer District
Seattle, Washington [90]

Project	Frequency Maintenance (Yrs)	Annual Shoaling (Cu.Yds.)	Estimate Total Job (Cu.Yds.)	Disposal	
				Diked	Water
Anacortes	8	1500	12,000	Diked	[a]
Bellingham Harbor					
Squalicum Ck	8	10,000	80,000		60' water
Whatcom Creek	4	9,000	36,000	Diked	60' water
I & J	8	10,000	80,000		60' water
Everett Harbor					
below gap	4	70,000	280,000	over dike[c]	
upstream gap	4	125,000	500,000	Diked	
Grays Harbor					
(a) Hopper Dredge	annual	1,000,000	1,000,000		40' water
(b) Pipeline Dredge	annual	800,000	800,000	diked & flats	
Lake Crockett	5	6,000	30,000	replenish beach	
Lake Wash Ship Canal	10	4,000	40,000		120' water[e]
Olympia	15	7,000	105,000		60' water[f]
Port Gamble	20	2,500	50,000		60' water[g]
Oak Bay Canal	10	1,000	10,000		60' water[h]
Quillayute River	annual	40,000	40,000	replenish spit	
Seattle Harbor					
Duwamish River	4	150,000	600,000	Diked	60' water[i]
Swinomish Channel	annual	100,000	100,000	Diked[j]	
Tacoma					
Hylibus Waterway	4	4,000	16,000		120' water

EXHIBIT 48
Page 2

Tacoma (cont)					
Port Industrial	8				120' water[k]
City Waterway	10	10 000	100,000		120' water[k]
Willapa Harbor					
(a) Hopper Dredge	annual	500,000	500,000		Deep water[l]
(b) Pileline Dredge	2	300,000	600,000	Diked	

a - Possible future disposal area
b - Bellingham Bay
c - Shallow water
d - Grays Harbor
e - Shilshoal Bay
f - Budd Inlet
g - Straits of Juan de Fuca
h - Oak Bay
i - Elliott Bay
j - Also used to replenish beach
k - Commencement Bay
l - Pacific Ocean

EXHIBIT 49
Page 1

RM WPC-19

MEMBERS OF THE AUTHORITY
HAROLD WENDEL, CHAIRMAN, PORTLAND
RICHARD H. WILCOX, PORTLAND
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RMAN P. MEIERJURGEN, BEAVERTON
B. A. McPHILLIPS, McMINNVILLE
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HN P. AMACHER, WINCHESTER
NNETH H. SPIES, SECRETARY
PORTLAND

MAILING ADDRESS:
P. O. BOX 231
PORTLAND, OREGON 97207

TELEPHONE:
AREA CODE 503
226-2161

STATE OF OREGON
OREGON STATE SANITARY AUTHORITY
A DIVISION OF THE OREGON STATE BOARD OF HEALTH
STATE OFFICE BUILDING
1400 S. W. 5TH AVENUE
PORTLAND, OREGON 97201

January 27, 1967

Mr. B. David Clark
Sanitary Engineer
Pacific Northwest Water Laboratory
200 South 35th Street
Corvallis, Oregon 97330

Re: S - 6 Houseboats

Dear Mr. Clark:

This is to follow up the meeting on January 5, 1967 between yourself, Jack Sceva, and our staff members regarding water pollution caused by watercraft. At that time you requested a letter outlining the Oregon State Sanitary Authority's position on this matter.

Portland, Oregon, one of the west coast's busiest harbors, is located more than 100 miles upriver from the Pacific Ocean. Waste discharges from ocean going vessels represent a significant portion of the remaining pollution of the Columbia and Willamette Rivers. Action at the federal level is urgently needed to curb pollution from these vessels.

As you know, the Oregon State Marine Board is authorized to adopt regulations concerning the disposal of sewage wastes from pleasure craft. The State of Oregon has not officially approved any individual waste disposal unit for use on boats. We are instead, looking toward complete holding of sewage aboard and discharge to shore-based facilities for adequate treatment and disposal. A type of device which does not return anything to the stream such as the incinerator toilet would probably be acceptable. A device such as the macerator-chlorinator is not considered acceptable.

We strongly support the current investigation into water pollution by boats and hope that your efforts will culminate in definite corrective action.

Very truly yours,

Kenneth H. Spies

Kenneth H. Spies
Secretary and Chief Engineer
State Sanitary Authority

KHS:EAS:jf

343<

cc: State Marine Board

EXHIBIT 50
Page 1

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS 91
WASHINGTON, D. C., 20315

Regulation
No. 1125-2-302

28 October 1965

PLANT
Sewage Disposal Equipment

1. Purpose and Scope. This regulation prescribes the policies and procedures covering the design, acquisition, installation, operation and testing of sewage disposal equipment on Civil Works Revolving Fund and project owned floating plant. It is applicable to all Divisions, Districts and separate activities performing Civil Works functions.

2. References.

a. Federal Water Pollution Control Act (33 U.S.C. 466 et seq).

b. ER 1165-2-116.

3. Policy. It is the policy of the Chief of Engineers that Civil Works floating plant will be equipped with suitable sewage treatment equipment to comply with the intent of reference 2a and the Department of Health, Education and Welfare program for protection of our water resources.

a. Vessels which operate in fresh water lakes or rivers shall not discharge sewage, ballast or bilge water within areas adjacent to domestic water intakes as designated by local authorities or by the Surgeon General, Public Health Service, in the Federal Register (September 16, 1960).

b. Sufficient emphasis will be placed on this program to achieve the following objectives:

(1) Provide leadership in the development and usage of sewage disposal equipment on floating plant.

(2) Cooperate with Federal, State and Municipal Agencies in their efforts to abate pollution and achieve improved water supply sources.

4. Implementation. a. All planned installations of sewage treatment equipment on Corps of Engineers floating plant will be forwarded to the Chief of Engineers, Attn: ENGCW-OS for approval of design. Prior to forwarding for approval, aerobic and central maceration-chlorination installations will be designed or reviewed by the Marine Design Division, Philadelphia District.

b. After receipt of this regulation, all new vessels and those having major conversions, will be equipped with sewage treatment installa-

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This Regulation rescinds Multiple Letter 25 September 1964, ENGCW-OS, Subject: "Floating Plant Sewage Disposal Systems."

Incl 2

tions which will insure that effluents discharged into navigable waters will meet the control criteria cited in paragraph 5 below.

c. The installation of sewage treatment equipment on existing plant will be scheduled in the Plant Replacement and Improvement Program and approved by ENGCW-OS when funds are available for this purpose.

d. Sewage treatment equipment installed on existing equipment will also meet the control criteria cited in paragraph 5 below.

e. The requirements cited in sub-paragraphs b, c and d above, do not apply to those vessels on which sanitary facilities are not provided or contemplated.

5. Control Criteria. Sewage treatment equipment will be capable of producing a sewage effluent, without dilution with water in addition to that required for all sanitary purposes, which will not exceed the following criteria:

a. Vessels with a normal complement of 25 or more, including passengers and crew. Sewage may not contain more than 50 milligrams per liter of Biochemical Oxygen Demand nor more than 150 milligrams per liter of suspended solids, nor more than 1,000 coliform organisms per 100 milliliters.

b. Vessels with a normal complement of 24 or less, including passengers and crew. Sewage may not contain more than 1,000 coliform organisms per 100 milliliters.

6. Equipment. The following type of equipment is required to meet the above control criteria.

a. For vessels with a normal complement of 25 or more, Par. 5a above, an aerobic type of sewage disposal equipment shall be installed.

b. In cases where the normal complement is between 10 and 24, Par. 5b above, a central maceration-chlorination type of system shall be used.

c. When the normal crew complement is between 1 and 9, Par. 5b above, individually packaged maceration-chlorination, electro-chemical or other type units approved by ENGCW-OS shall be used. The Marine Design Division, Philadelphia District, has compiled a list of commercially produced equipment of this type which meet approved criteria.

d. In the event that space, draft or other essential operational requirements do not permit installation of equipment in conformance with the above criteria, a request for deviation, along with proper explanation, justification and recommendation for the installation proposed will be included in the request for authority required by Par. 4a above.

7. Sampling and Testing.

a. Samples. Effluent samples will be taken to assure satisfactory operation of the equipment and conformance with the above control criteria as follows:

(1) Aerobic and central Maceration-Chlorination equipment: An effluent sample will be taken at least once every month and analyzed by a competent laboratory. Samples from aerobic equipment will be analyzed for coliform, suspended solids and BOD content. Samples from central maceration-chlorination equipment will be analyzed for coliform content only.

(2) Individual packaged Maceration-Chlorination or Electro-Chemical equipment: An effluent sample will be taken at least once every three months and analyzed by a competent laboratory for coliform content only.

(3) Automatic sampling equipment is not normally justified for use with individual packaged type equipment but is usually a useful accessory to Central-Maceration or Aerobic equipment.

b. Testing. Laboratory analysis of samples is considered necessary. Health, Education and Welfare personnel have advised that test analysis requires laboratory facilities and specialized training of personnel to obtain accurate results. Laboratory testing is often available, without cost, from Municipal and State water or sewage facilities.

8. Reporting. In order to evaluate the performance of units produced by various suppliers, a one time report shall be furnished ENGCW-OS after each installation has been in operation for six months. The report shall cover, but not be limited to the following:

a. Trade name and model designation of the unit. Number of units if multiple installation.

b. Name and address of manufacturer.

c. Date and cost (procurement and installation) of the equipment.

d. Name of vessel and number in crew. Include normal passengers usage if pertinent.

e. Number and type of sources (urinals, water closets, showers, galley sinks, etc.) contributing waste to the central treatment unit.

f. Normal area of vessel operation.

g. Convenience of servicing and operation.

h. Effectiveness of operation.

i. Brief narrative covering any suggestions for improvement and comments relative to construction, installation, maintenance, etc., which will assist in the overall evaluation of the unit.

j A reports control symbol is not required pursuant to paragraph 39w, AR 335-15.

FOR THE CHIEF OF ENGINEERS:

C. W. CHAPMAN, JR.
Colonel, Corps of Engineers
Executive

EXHIBIT 50
Page 5

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
CUSTOM HOUSE—2 D & CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

IN REPLY REFER TO
NAPMD

16 February 1967

Mr. Donald J. Hernandez
Project Leader, Watercraft Pollution Study
Pacific Northwest Water Laboratory
200 South 35th Street
Corvallis, Oregon 97330

Dear Mr. Hernandez:

This will acknowledge receipt of and reply to your letter, dated 20 January 1967, requesting information on commercially produced waste treatment systems.

The following is a list of manufacturers from whom equipment has been procured for Corps of Engineers' vessels having normal complements outlined in paragraphs 6a, 6b and 6c of Department of the Army Regulations ER 1125-2-302 dated 28 October 1965, copy of which is inclosed.

Paragraph 6a

Worden-Allen Company
P. O. Box 257
Milwaukee, Wisconsin 53201

American Shipbuilding Co.
Lorain, Ohio 44052

Chicago Pump Co.
622 Diversey Parkway
Chicago, Illinois 60614

Pall Corp.
Glen Cove
Long Island, New York 11542

EXHIBIT 50
Page 6

Paragraph 6b

Carlson and Sons Inc.
120 Forrest Street
Metuchen, New Jersey 08840

Paragraph 6c

Carlson and Sons Inc.
120 Forrest Street
Metuchen, New Jersey 08840

Gross Mechanical Laboratory
1530 Russell Street
Baltimore, Maryland

Wilcox-Crittenden
Middletown, Connecticut

Raritan Engineering Co.
1025 N. High Street
Millville, New Jersey

The regulation is comparatively new and a majority of the equipment presently installed on our floating plant has not been in operation for sufficient time to comply with the reporting procedure outlined in paragraph 8 of the regulation. However, interim reports indicate that the effluent characteristic of installed equipment is below that outlined in the control criteria, paragraph 5, of the regulation.

Sincerely yours,

GEORGE A. JOHNSON
Chief, Marine Design Division

1 Incl
as stated above

EXHIBIT 51
Page 1

Report of Study Pertaining to Marine Toilets & Chlorinators[92]

June - August, 1962

1. Purpose of Study:

With the rapid growth of boating and development of greater cruising and trailering range of boats equipped with marine toilets, there has been a resultant increase in pollution of streams and lakes from these craft. This has caused some alarm, particularly among residents and recreationists at inland lakes where water is taken from the lakes for domestic purposes. State Marine Director Robert F. Rittenhouse has been approached by state officials with proposals or suggestions that marine toilets be plugged in such areas, and that the matter be the subject of bills to be offered the next state Legislature.

The supervisor of the Umpqua National Forest announced in June, 1962 that, effective July 16, all cabin cruisers on Diamond Lake equipped with "heads" must have the heads sealed before launching. He was concerned with the amount of sewage going into the lake, which drains into the North Umpqua River, from which the city of Roseburg and other communities get their water supplies.

Articles of pollution from boats and steps taken to abate it have appeared in several publications, notably the June issue of Motorboating magazine and the May issue of the United States Power Squadrons publication, The Ensign.

Twelve states have enacted laws restricting or controlling the use of marine toilets. These include California, Indiana, Nebraska, Nevada, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, South Dakota, Wisconsin, Minnesota. The state of New Hampshire was the first to adopt an act (1958) and this act has been followed by other states as a model. The Outboard Boating Club of America drew up a model act on sewage disposal from boats, based substantially on the New Hampshire law. The Council of State Governments endorsed the New Hampshire act, also.

Inquiry among Portland marine dealers revealed that few, if any, knew much about marine chlorinators, and they indicated little apparent interest. I was unable to learn of the installation of a single chlorinator in any Oregon pleasure craft.

2. Method of Conducting Study:

Letters were addressed to 15 manufacturers of marine toilets, chlorinators, and similar equipment, who were listed in various sources, or who had advertisements running in magazines. The letters outlined our feeling that it was desirable for the State Marine Board to consider the subject and asked for literature on their chlorinators.

A copy of the letter is attached.

EXHIBIT 51
Page 2

Replies have been received from 10 of the firms, and five of them sent literature on the equipment they manufacture. Two or three others indicated they were testing or experimenting with such equipment. One firm distributes equipment built by one of the replying manufacturers. Another has suspended sales, pending further testing.

Letters also were sent to the National Association of Engine and Boat Manufacturers and the Outboard Boating Club of America. Bob Rittenhouse sent letters to various states asking for copies of their laws pertaining to the matter.

The NAEBM referred its letter to the National Boat and Yacht Council, Inc., which serves as the technical society of the boating industry, and a very good reply came from its Secretary. As a result of the latter, letters have been sent to the New Hampshire Water Pollution Commission and the State of New York Department of Health, requesting copies of their reports on studies and tests of marine toilet chlorination units. These agencies have not replied at this time.

A letter was sent to Mr. James J. O'Brien, Director of the Division of Motor Boats, State of New York, for his views on possible legislation. He is chairman of the Conference of Boating Administrators, and was quoted as being opposed to legislation at this time on the grounds that such would be premature and unenforceable. A reply has not been received at this time.

Letters were also sent to the Oregon State Game Commission, P. W. Schneider, Director, inquiring as to possible effect on fishlife of chlorine flushed from marine toilets; and to the supervisor of the Umpqua National Forest asking whether consideration had been given to amending his order to permit chlorinators on boats at Diamond Lake. These agencies have not replied at this date.

3. Substance of Replies from Manufacturers:

a. Raritan Engineering Co., Millville, N. J.

Perry Belden, President, asserted his firm is, by many times, the largest manufacturer in the world of marine toilets and chlorinators, and he enclosed a copy of a publicity article which outlined the problem and told what Raritan has developed. He claims his equipment removes 99 percent of the solids and odor-causing bacteria. He also enclosed copies of an evaluation report by the Quality Control Laboratory, Philadelphia, Pa., to support the claims of effective treatment, and sales sheets, installment instructions and parts lists.

The Raritan Electro-Chemical chlorinator consists of a white, non-metallic tank made of Delrin, with motor attached above the tank. Material is flushed from the toilet into the tank where it pulverizes by the motor-driven blade in the first of two retention chambers. At the same time, a small quantity of Clorox, a standard household bleach that contains at least 5 percent sodium hypochlorate, was mixed with the material. At the pumping of the toilet, the material is moved into the second chamber, where it remains until another pumping discharges it into the water outside. Thus, it has a positive retention period in which to become thoroughly disinfected.

The equipment can be installed in any boat having a space about 24 inches long by 9 inches wide and 13 inches high, within four feet of the toilet. Simple tools are the only ones required for installation. Cost of the equipment is $90., f.o.b. Millville, N.J.

b. McPherson, Inc., Tampa, Florida.

Reply from the sales manager of this concern indicates that they manufacture a Cloromiser which operates with a McPherson toilet of the "disintegrator" type. This toilet "disintegrates and completely liquifies toilet paper and human fecal by means of a small jet of water under pressure. This separates the sewage and leaves it in an ideal condition to be quickly consumed by aerobic bacteria after it is ejected from the boat." This action can be augmented by injecting chlorine with the jet water, with a retention time of 20 to 30 seconds for mixing of the chlorine before the material is ejected.

"Our tests show that a further retention time adds little to the effectiveness of the chlorine," the letter adds. The Cloromiser is constructed of injection molded polyvinylchloride, which, according to the manufacturers of the material, is impervious to sodium hypochlorite.

Retail prices on complete systems, including Cloromiser, start at $102.45. Installation is easily handled by the average "do-it-yourselfer".

c. The Headmaster Company, New Brunswick, N.J.

The president replied, sending literature on its Model EH, which was described as the smallest and most compact now on the market. It consists of a small, round tank, with a motor in the top, an electric valve, and intake tube from the Clorox bottle. Main body of the chlorinator is 8½ inches high, 7" in diameter, and motor extends 5" above the body. Total weight about 20 lbs.

When the toilet is pumped, the motor starts automatically, and the sewage is mascerated, and treated with sodium hypochlorite, which renders the effluent harmless. The unit discharges itself and then is ready for the next use of the head. The entire operation takes one to 1½ minutes. The equipment is sold for $104.50 for 6-volt and 12-volt units, and $124.50 for 32-volt and 110-volt units. Installation instructions indicate the equipment can be installed easily by anyone handy with tools.

The Headmaster is distributed exclusively by Perkins Marine Lamp and Hardware Corporation, Miami, Fla., which has a nation-wide sales organization. The assistant sales manager of Perkins, also replied, sending similar material, and indicating much interest in our move.

EXHIBIT 51
Page 4

d. SaniWare Marine, Division of Mission-West Manufacturing Co., Los Angeles

Manager of this division replied, commenting that our consideration of "seeking legislative authority to handle regulation of pollution from boats to the best advantage of the boating public certainly has a lot of merit."

This equipment consists of a fiberglass waste-holding tank into which the toilet flushes directly. The material is held in the tank until the boat is out in the open and unrestricted waters, when a seacock can be opened to empty the tank. For trailered boats, the system functions like self-contained travel trailers. The tank can be connected to a sewer system cleanout at home or at the moorage, and drained. Deordorizing and sanitizing chemicals can be used occasionally for odor control and sanitation.

The firm offers a marine toilet for $89.50 and waste-holding tanks of 5-gal., 12-gal., and 16-gal. capacity, for $60, $71 and $82.50 respectively but the hose, seacock valve, repair kits, etc., add $60.00 to $70.00 to the cost. Instructions for installation are included.

e. Gross Mechanical Laboratories, Baltimore, Md.

This firm replied June 19 that it had its Groco Chlorinator under test, but no literature. About August 1 it sent literature announcing its Model CHL-100, priced at $100, plus an automatic switch for $30., f.o.b. factory.

This model consists of a round tank, 10" in diameter, 14½" high including motor, with fittings which add 5" to the diameter, dry weight 12½ lbs. This equipment pulverizes sewage and mixes with Clorox in a 30-second operation. The automatic switch starts the motor at the start of each toilet flushing. It delivers 12-13 ounces of chlorox per flushing. The tank is made of molded polyethylene, with stainless steel screws, nylon and neoprene bearings, rings., etc. The instruction sheet indicates it can be easily installed.

Seabee Marine Co, Perth Amboy, N.J. reported it had suspended sale of its automatic electro-chemical marine toilet combination for an indefinite period for further research of operational problems with the chlorox metering system.

Wilcox-Crittenden, Division of North & Judd Manufacturing Co., Middleton, Conn., replied that it did not now have a chlorinator on the market. However, it is working on a new, highly refined unit which should be ready for marketing soon, close to July 31st.

American Hard Rubber Co., Butler, N. J., replied that it had little or nothing to offer at the present.

4. Replies from Industry Service Organizations:

a. Outboard Boating Club of America, by Ron Stone, government relations department. "We would like you to know that OBC is in accord with your thinking on such legislation," he wrote.

"Realistically, pollution from pleasure boats is quite negligible when one considers the hazards of untreated sewage from major cities and wastes from industries that continue to be poured into waterways. However, in the isolated instances where boat pollution problems do exist, provision for the installation of sewage treatment devices aboard watercraft equipped with sanitary facilities appears to be the fairest way of dealing with such problems.

"That several states have already adopted marine chlorinator laws for pleasure boats attests to the fact that this pollution solution has been tried and proved, and is not merely an idea. Enclosed are copies of two such state laws--New Hampshire's, in operation since 1958, and Minnesota's, which goes into effect the first of next year."

Stone mentioned New York's consideration and studies, and the fact that Governor Rockefeller vetoed a bill in the last session which would have prohibited the mooring or operation on a particular inland lake of any craft equipped with sanitary facilities which discharge into the water. He (Rockefeller) recommended instead that state agencies cooperate with a special legislative committee in developing uniform legislation relating to boat sanitation and the use of sanitation facilities.

Stone pointed out that OBC and NAEBM have recommended to boat building members that they provide space in new boats for waste treatment devices, and he enclosed a copy of the Engineering Manual of Recommended Practices, which recommended a space 26" by 24" by 14" high be provided for toilet treatment equipment.

b. American Boat and Yacht Council, Inc., John G. Kingdon, secretary, replied for the National Association of Engine & Boat Manufacturers.

State legislatures are purposely being slow and cautious to adopt bills concerning treatment of human waste from small craft, Kingdon said. This is because:

1. Such waste is a minimal part of the overall pollution of our waterways.

2. As of right now, no commercial chlorinators meet the standards of the boating industry as to maximum content of coliform bacteria allowable in the effluent. Thus, legislation at this time would be impossible to enforce.

Kingdon enclosed a copy of the approved code of "standards and recommended practices for sewage treatment devices for marine toilet waste, including their installation."

He said four of the ten members of the committee that developed the report are manufacturers of chlorinators.

"The manufacturers, of course, are working intensively to bring their equipment up to standard," he added.

Working with them are the New Hampshire Water Pollution Commission and Microbiological and Biochemical Center, Syracuse University Research Corporation, which had completed studies of marine toilet chlorinators. Other state bodies have been keeping in close touch with these organizations. So also is the Conference of Boating Administrators, whose chairman is James J. O'Brien, Director of the Division of Motor Boats, State of New York.

Mr. Kingdon suggested that we contact Mr. O'Brien, whom he believed will concur in the theory that legislation concerning treatment of human waste from small craft would at this time be premature and unenforceable. (We have written Mr. O'Brien for his comment.)

5. Laws of Other States.

Copies of the laws adopted by New Hampshire and Minnesota were forwarded by the Outboard Boating Club of America.

The New Hampshire law prohibits the discharge of inadequately treated sewage into waters of the state directly or indirectly. The law requires all boats equipped with marine toilets to have them connected with suitable treatment devices through which all of the sewage flows and is treated before it passes into the water. The New Hampshire Water Pollution Commission was given authority to administer the act by regulation, and to suspend the registration of any boat which is not adequately equipped for treatment of sewage. Violation is punishable by fines of not more than $500 or imprisonment for not more than one year.

The Minnesota law, to go into effect January 1, 1963, prohibits the operation of any marine toilet on the waters of the State unless the toilet is equipped with a treatment device acceptable to the Water Pollution Control Commission of the state. The Commission shall upon request furnish a list of types of treatment devices currently available and considered acceptable, and the list shall be furnished the sheriff of each county. The installation or presence of a marine toilet shall be indicated by the owner upon application for licensing of the craft, and no license shall be issued except upon certification by the owner of the installation of an acceptable treatment device for use with such marine toilet. Violation is a misdemeanor.

Bob Rittenhouse has written several states for copies of their laws.

California prohibits the mooring of a houseboat or boat used as a residence on any water two miles above the intake where a city takes water for domestic purposes.

Indiana requires that marine toilets must be sealed so no human wastes are discharged into water, except on Lake Michigan.

Nebraska requires kitchen and toilet waste to be treated to prevent pollution.

Nevada requires marine toilets to be equipped with devices to treat human wastes.

New Jersey prohibits the operation of vessels equipped with toilets on non-tidal waters as long as waste matter that might harm fish or wildlife, or litter the shoreline, can be discharged.

New York prohibits the depositing of offensive matter into navigable waters. On Lake George, Sanitary facilities on boats must be removed, sealed or drained into a portable tank which can be taken ashore.

Ohio: Sanitary systems must be removed, sealed or drained into a portable tank for disposal ashore except those operated on Lake Erie, Muskingum River, Ohio River, and connected harbors and anchorages.

Pennsylvania: On Pymatuning Lake, new sewage or similar substances may be discharged into water except after complete treatment.

South Dakota: Treatment of sewage is required before discharge.

Wisconsin: It is unlawful to operate on inland waters except Lake Winnebago, Mississippi River, or Wisconsin River for 15 miles above and below the dam at Wisconsin Dells any boat equipped with a marine toilet unless it is sealed and rendered inoperative so human waste can not be discharged into the water.

6. Conclusions and Proposal:

In consideration of the foregoing study of marine toilet sewage treatment devices, state laws pertaining to this subject, and comments received from industry and government agencies, it is my belief that the State of Oregon will be giving consideration to some sort of regulation of marine toilets and treatment devices in the near future.

Rather than to have the regulation fall into the hands of a non-boating state board or commission, I feel that the State Marine Board should place itself in the position of protecting those boat owners whose craft are operated in waters already heavily polluted by cities and industries, where pollution from boats is only a very minimal part of the overall pollution, or where the normal flow of water adequately cleans itself of coliform bacteria.

The Board should propose to the Legislature that it be given the authority to regulate the requirement and installation of adequate treatment devices in boats equipped with marine toilets.

Whether the Board should ask for authority over the regulation of treatment devices on houseboats and floating living quarters, and floating shops and other structures in which toilets discharge directly into the rivers and lakes, is a question which the Board would have to decide after due consideration of the problems of enforcement involved.

I recommend that the State Marine Board request the State Legislative Counsel to prepare a bill to give the Board the authority outlined above, with ample leeway for adoption of standards and regulations as needs arise.

Lawrence Barber, Member

Addendum to Report of Study Pertaining to Marine Toilets & Chlorinators

June - August, 1962

1. Substance of Letter from James J. O'Brien, Director, Division of Motor Boats, State of New York Conservation Department, Albany, New York:

New York has for several years been considering the advisability of applying restrictions on marine toilets. In the interest of knowing whether or not the equipment was available to do the job, the State awarded a contract to Syracuse University to study all types of equipment presently on the market. I do not have the formal results, but I am aware that equipment now available is performing satisfactorily and is of sufficient quantity to permit the public to comply with such a restriction if it were enacted.

The greatest drawback now is the large quantity of Clorox that must be carried in the boat. It is the only chemical available that destroys bacteria and is not toxic to fish or humans.

A further problem is the cost of treatment devices, which make it unreasonable to expect boaters to make large expenditures to comply with the law. The initial approach probably would be on inland waters.

We have deliberately delayed application of this law until all facets of the problem are completely correct.

2. Reply from P. W. Schneider, Director, Oregon State Game Commission, Portland, Oregon:

At present levels of use, I doubt that the amount of chlorine that would be introduced to a lake or stream from boat chlorinators would be sufficient to endanger fish life. We have no precise information, but this is an interesting question.

I am taking the liberty of forwarding a copy of your letter to the State Sanitary Authority, with a request that they forward to you any information they may have on the subject.

3. Reply from V. E. Miller, Supervisor of the Umpqua National Forest, Roseburg, Oregon:

I was not aware that industry was trying to develop a means of purifying such sewage before it is discharged into the water. This might be a very satisfactory solution to the question.

It would be my though that the State Sanitarian should work closely with those who are trying to develop other means of handling this problem.

EXHIBIT 51
Page 10

Diamond Lake is relatively shallow, with a maximum depth of 53 feet, and warms up to above 70 degrees in the summer. This condition is favorable to bacterial growth.

We are open minded on the matter and if other satisfactory ways are developed which are acceptable to the State Sanitarian, Fish and Game Commissions, and others who might be involved, then I shall of course be happy to accept it also.

Another type of waste disposal unit developed for boats is the waterless Destroilet, manufactured by LaMere Industries, Inc., Walworth, Wisconsin. We asked this firm for a description of its unit when the original letters went out, but have not had a reply.

However, Motorboating, June, 1962, says this unit destroys human waste completely in an enclosed chamber where it is subjected to intense heat from a power burner operated on bottled gas. The waste is vented off into the air as an invisible, harmless, colorless vapor. Thus, no below-the-waterline through-hull fittings are required. It sells for about $300.

C O P Y

EXHIBIT 52
Page 1

Department of the Navy
Naval Facilities Engineering Command 53
Washington, D. C. 20390

NAVFACNOTE 11345

16 May 1966

NAVFAC NOTICE 113345

From: Commander, Naval Facilities Engineering Command
To: Distribution List

Subj: Sewage Collection Systems at Naval Ship Berthing Locations;

1. Purpose. To forward information concerning planning requirements for sewage collection systems at ship berthing piers and other similar areas.

2. Comments. Experience gained, in coordinance with Naval Ship Systems Command has shown that because of the numerous ship sanitary waste discharge points, it is not considered practical to develop a system to discharge ship sewage to a dockside collection system. Therefore, in an effort to solve the vessel pollution problem in harbors, ports and estuaries, the Naval Ship Systems Command is presently studying various prototype sewage treatment methods for possible ship board application. This program is being developed within the guidelines adopted by the Interagency Committee on Sewage and Waste Disposal from Vessels, headed by the Public Health Service of the Department of Health, Education and Welfare.

3. Action. Planning to provide dockside sewerage systems to accommodate Naval vessels is not required. NavFac may install sewage systems to collect waste discharge from ships to meet the needs of specific situations, such as a reserve ship permanently moored along a pier, hotel barges and others. Navfac Field Divisions will be advised when these situations develop by specific ship type sewerage requirements and proposed Naval Base berthing location.

4. Cancellation. This Notice is cancelled when it contents have been noted; for record purposes, 30 December 1966.

N. M. Martinsen
Captain, CEC, USN
Deputy Commander for
Facilities Management

Distribution:
SNDL N1

Copy to:
A3, A4a, A4B, F2, F3, F75, F77, F81, F86,
L1, L19

C O P Y

EXHIBIT 53
Page 1

Waste Water Disposal Practices of the U. S. Maritime Administration[89]
December 6, 1965

EXHIBIT 53
Page 2

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27
5010-107

UNITED STATES GOVERNMENT
Memorandum

TO : Officer-in-Charge

DATE: December 6, 1965

THROUGH : T. C. Ferris

FROM : Kenneth H. Mosbaugh

SUBJECT: Waste Water Disposal Practices - U.S. Maritime Administration Reserve Fleet, Olympia, Washington

DESCRIPTION OF INSTALLATION

This installation was inspected on November 4, 1965 in the company of Mr. Carl Johnson, Fleet Superintendent and Mr. John Kean, Captain of the Fleet. The Fleet is located on Budd Inlet (South Puget Sound) on the outskirts of Olympia, Washington.

The Fleet was created as a result of the National Defense Reserve Fleet Act in 1946 and its sole function is to preserve various types of vessels for use in case of a National Emergency. There is a total of 137 ships. The installation presently has a ceiling personnel total of 92 persons, however, this number would ordinarily average 75 or 80.

DOMESTIC WASTE DISPOSAL PRACTICES

Shore Facilities

The primary shore facility is an Administration Building which houses the headquarters office, a first aid room and two shower rooms. In addition, on shore there is a work shop, a garage, and a chlorination building. The latter two facilities have no sanitary units. All the shore facilities having sanitary units are connected to a 1500 gallon septic tank which is equipped with a 540 gallon chlorination chamber. A one to four mixture of sodium hypochlorite solution (5% available chlorine) and water are automatically pumped into the contact chamber at periodic intervals. Effluent from the septic tank and contact chamber is discharged to a catch holding tank to eliminate any tidal syphoning effect prior to discharge to Puget Sound. The final effluent line is a six-inch C.I. pipe which extends about 150 ft. from shore to below mean lower low water tide elevation. Samples of septic tank effluent are collected every two months for coliform bacteria analysis by the County Health Department. Two samples collected on January 29, 1964 and September 1, 1965 showed MPN counts of 3.6 and 2.6 MPN/100 ml. respectively. The septic tank was last pumped in 1962.

Floating Facilities

Working craft include a self-propelled work barge, one supply barge, one crane barge, two 120-ft. tugs, two 42-ft. patrol boats, one small launch, plus several painting barges.

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

The work barge is the central work facility. It has a stationary crew of five and is equipped with one water closet which is used occasionally throughout the day. This vessel is moved around the fleet according to need.

Each of the tugs is equipped with a water closet and it is estimated that one tug is in use for approximately four hours every two weeks.

The patrol boats are operated by ten men on the security patrol on a twenty-four hour basis. Normal patrol operations involve two men per boat per shift with one man stationed in the headquarters office. These boats have no sanitary units.

Eight people are involved in transportation operations. Two of these are launch operators and the remaining five spend 50% of their time on craft and 50% in the office.

All of the above mentioned vessels which have sanitary units discharge domestic wastes untreated to Puget Sound.

In addition, there is one privy located in each row of Reserve ships for use during the day by work crews (approximately seven rows of ships). These units have attached a six-gallon bucket filled with chlorine solution for waste collection. When filled, these buckets are dumped directly into Puget Sound. Twenty to forty men work in a row of ships.

INDUSTRIAL WASTE DISPOSAL PRACTICES

Each of the 137 ships in the Reserve Fleet is scaled and painted every two years. Prior to painting, all rust scale and old paint are removed by the use of a high-pressure water jet nozzel. The scale and paint residue fall to the water and sink.

The spray painting season generally runs from May to October each year coinciding with good weather conditions. A paint mixture consisting of the following composition (by volume) is applied with spray guns: 75% paint pigment, 15% metal conditioning compound, 10% solvent (commercial cleaning solvent).

Two ships are painted at a time. The paint and spray pump are placed on a small paint barge, spray hoses extend from the barge to the ships. On the average it takes 64 man-hours to paint a ship or one day with eight men working. An average of 600 gallons of paint mixture are applied to each ship.

Some spray paint reaches the water surface in the painting area. As a control measure to eliminate waste paint discharge, Fleet personnel erect a large log boom around the ship or group of ships. This boom corrals all wasted paint which might reach the water surface. The floating paint is then swept up by use of an outboard boat equipped with a boom to which pieces of burlap are hung. Paint and oil adhere to the burlap as it is swept over the water surface. Used burlap is later burned in an incinerator. This method of paint disposal has proven very successful in eliminating the drifting paint problem.

EXHIBIT 53
Page 4

All oils and gasolines which must be wasted during Fleet operations are collected in a holding tank and later burned. Since the hulls of tugs and working vessels are preserved inside as well as outside, there is essentially no leakage and hence minimal pumping of bilges.

Reserve Fleet ship hulls are protected by a cathodic system utilizing graphite electrodes.

REFUSE DISPOSAL

All refuse from the base operations is collected and burned on a floating barge which is anchored near the Fleet.

CONCLUSIONS AND RECOMMENDATIONS

The discharge of untreated domestic waste to Puget Sound, does not meet the water pollution requirements of the State of Washington and the U.S. Public Health Service. Secondary treatment or its equivalent has been established as a general standard for Federal installations. The following recommendations will satisfy these requirements for the Olympia Reserve Fleet:

1. The discharge of chlorinated septic tank effluent to surface water is not equivalent to secondary treatment. If field lines for ground absorption of the septic tank effluent cannot be provided, then additional treatment facilities should be constructed.

2. The use of privy units located throughout the Fleet should be discontinued. Another more acceptable method of waste disposal should be used. One method would be the use of a small sewage treatment plant. Another solution would be to contract for the rental and serving of chemical toilets.

3. All mobile vessels with existing toilets should be provided with holding tanks. Dock facilities to pump the wastes to an adequate shore treatment facility should be provided.

The following time schedule to accomplish these objectives is recommended:

a. The design of the recommended improvements be completed during FY 1966.

b. The construction of new facilities be completed early in FY 1968.

The requirements of the Washington State Pollution Control Commission should be met.

The Olympia Fleet should be congratulated for their efforts to control pollution from the painting operations. No serious problem is anticipated at this time with waste residue from the scaling operation.

Kenneth H. Mosbaugh

EXHIBIT 53
Page 5

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27
5010-107

UNITED STATES GOVERNMENT

Memorandum

TO : Officer-in-Charge
THROUGH : T. C. Ferris
FROM : Kenneth H. Mosbaugh

DATE: December 7, 1965

SUBJECT: Waste Water Disposal Practices - U.S. Maritime Administration Reserve Fleet, Astoria, Oregon

DESCRIPTION OF INSTALLATION

This installation was inspected on November 2, 1965 in the company of Mr. Loren L. Kuske, Fleet Superintendent. The Fleet is located in the eastern outskirts of Astoria along the Columbia River.

The function of the Reserve Fleet is to preserve various types of vessels which are maintained for use in case of a National Emergency. Fleet personnel presently maintain 110 vessels. This number is subject to decrease as ships are withdrawn for use or scrap. The installation has a ceiling personnel total of 45 people.

DOMESTIC WASTE DISPOSAL PRACTICES

Shore Facilities

Base headquarters and primary shore facilities consist of an administration building, sick bay, storeroom, a vacant building, and a warehouse-garage combination. All of these facilities with the exception of the storeroom and warehouse-garage are connected to a single septic tank for sewage service (the former two facilities have no sanitary units). Exact information pertaining to septic tank capacity or dimensions was not available but it is equipped with a distribution box and drainfield (300 ft. of 6 in. drain tile) and is located about 200 ft. southeast of the administration building. No problems have been encountered with this system.

The shower room was originally designed for the work crew, but it is not used as they use sanitary and shower units on the floating barge instead. Sick bay is not in operation - medical facilities in nearby Astoria are used.

Floating Facilities

Working craft include a floating work barge, a floating crane barge, two large tugs, and two 45-foot patrol boats. These vessels are used in servicing the Fleet and are docked on the end of a 1,000 foot dock adjacent to the Administration Building.

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

The work barge serves as the central work craft and is equipped with work shops, auxiliary power equipment, etc. This barge also serves as the dispersing point for the work crew. The men change their clothes, clean up, and use sanitary units on this vessel prior to and after work. A maximum work crew consists of sixteen men who are responsible for the actual scaling and painting operation. In addition, seven men are stationed on the work barge continuously throughout the day. Approximately four men from the security patrol use sanitary facilities on the work barge during a twenty-four hour period. Maximum usage of sanitary units on this vessel would occur during the half-hour period prior to and after the work day. A maximum number of persons using the units during these periods is estimated at twenty-three persons.

The floating crane barge, and two large tugs are each equipped with a water closet. A total of five men would be involved in operations on these vessels.

The 45-foot patrol boats have no sanitary units on board. Patrol crew members generally use the units on the work barge.

Untreated sewage and domestic waste from all the floating facilities are discharged directly to the Columbia River. In addition seven privies are located throughout the Reserve Fleet. These units are occasionally used during the work day.

INDUSTRIAL WASTE DISPOSAL PRACTICES

Each of the 110 ships in the Reserve Fleet is scaled and painted every two years. Rust scale and old paint are removed by the use of high pressure water hoses, the residue falls into the water and sinks to the bottom.

Following scale removal, a paint mixture consisting of the following composition by volume is applied: 75% paint pigment, 15% oil compound, 10% solvent (cleaning solvent). The mixture is applied under high pressure (900 psi) with spray guns. A certain amount of atomized paint reaches the surrounding water surface depending on wind conditions. No attempt is made to recover waste paint in the paintingoperation. The major painting program obviously coincides with the better weather. It was mentioned that the paint used in this operation has been certified to be non-toxic internally and externally to human beings.

An inspection tour of the adjacent shores during the afternoon revealed no paint deposits or floating solids, however, no major painting operation was underway at that time.

A significant number of waterfowl were observed in the vegetated shoal areas surrounding the Fleet.

REFUSE DISPOSAL

All refuse from the base operations is burned on a floating steel barge which is anchored near the Fleet.

CLUSIONS AND RECOMMENDATIONS

The discharge of untreated wastes to the Columbia River does not meet the water pollution requirements of the State of Oregon and the U.S. Public Health Service. Secondary treatment or its equivalent has been established as a general standard for Federal installations. The following recommendations will satisfy these requirements for the Astoria Reserve Fleet:

1. The use of privy units located throughout the Fleet should be discontinued. Another more acceptable method of waste disposal should be used. One method would be the use of a small sewage treatment plant. Another solution would be to contract for the rental and serving of chemical toilets.

2. All mobile vessels and the stationary work barge with existing toilets should be provided with holding tanks. Dock facilities to pump the wastes from the holding tanks to an adequate shore treatment facility should be provided.

3. Facilities should be provided to recover sprayed paint that falls on the water. At Olympia, the use of a log boom surrounding the ships being painted and sweeping the enclosed water surface with burlap has proved successful. No serious problem is anticipated at this time with waste residue from the scaling operations.

The following time schedule to accomplish these objectives is recommended:

a. The design of the recommended improvements be completed during FY 1966.

b. The construction of new facilities be completed early in FY 1968.

The requirements of the Oregon State Sanitary Authority should be met.

Kenneth H. Mosbaugh

EXHIBIT 54
Page 1

Portland, Oregon City Ordinances

Section 16-2526. MENACE TO NAVIGATION.

Refuse from any mill or plant, slabs, boards, timbers, sawdust, chaff, dock or other kind of sweepings, pieces of structures, pile or timber butts, sunken vessels or other watercraft, gill nets, purse seines, set nets, towlines, dead fish or parts thereof, dead animals or parts thereof, fruit or vegetables or parts thereof, bedding, blankets, mattresses, furniture, logs, timber, piles, booms, sticks, lumber, dunnage, boxes, cans, crates, barrels, casks, hay, straw, excelsior, paper, sacks, burlap, sacking, empty containers, sludge or oil of any kind floating or being used on the waters of the port, and all other substances or articles of a similar nature, hereby are declared to be public nuisances and menaces to navigation. It shall be unlawful for any person to throw or place or permit to be thrown or placed any such menace to navigation in the Portland Harbor or in such position or location that the same may get into the harbor by high water or other means. Any such menace to navigation is subject to seizure by the harbor patrol, without warrant or notice, and to summary destruction and abatement whenever this can be done without committing a breach of the peace or doing any unnecessary injury to other property. In all other cases such nuisance may be abated in the manner provided by the law. The abatement of any such menace to navigation shall not excuse the person responsible therefor from prosecution hereunder.

Section 16-2531. DEAD ANIMALS, REFUSE, ETC.

It shall be unlawful to throw, place or leave any dead animal or putrefying matter into or on any part of the port, or to place or deposit any rubbish, refuse matter, or articles of any offensive character likely to create a nuisance upon any wharf, or any wharf road, or street leading to a wharf, except at the places and in the manner pointed out by the captain of the harbor patrol.

Section 16-2535. OIL VESSELS TO BE EQUIPPED.

All vessels and other watercraft engaged in the transfer of oil within the port shall have suitable hose and connections that shall not leak or drip and shall have a sand or sawdust bin on board that shall have at least three (3) sacks of dry sand or sawdust in it at all times and at least one (1) suitable drip pan and water bucket on board to catch and clean up any waste oil.

EXHIBIT 54
Page 2

Section 16-2536. OIL ON WATERS OF THE PORT.

(a) No person within the corporate limits of the city of Portland shall pump, cast, discharge or allow any petroleum or other oil of whatever nature to flow into and upon the waters of the Willamette River or into any tributary, sewer, drain, ditch or water which flows into said river.

(b) No vessel or watercraft of any nature whatsoever shall pump her bilges containing any oily matter into the waters of the port, but they must pump the same into barges or lighters equipped for handling such oil cargo, or with a syphon discharge, and any such pumping shall be a violation of this article if any such oily matter shall get into the waters of the port. Notice shall be given to the harbor patrol by the owners, agents or employees of such lighters or barges prior to such pumping or syphoning, and immediately upon completion of said operations notice thereof shall be given to the harbor patrol.

(c) No industrial plant, garage, service station, oil station, or other oil-using plant shall have any direct lead from an oily drain into any sewer, drain, ditch or other discharge without first running through a sump; and such sump shall be kept skimmed at all times, and in case any such sump overflows the responsible person shall be held the guilty party.

(d) Whenever any vessel or other watercraft is drydocked, beached or hauled out on any ship way, and oil of any kind is leaking, all due precautions must be taken to keep such oil from flowing out into the waters of the port; and all such oils must be skimmed into barrels or other containers or absorbed by quantities of hay, straw, or dry shavings. No chemical cleaner can be used for oil on the water. Such oil must be removed to some place other than where it may again enter the waters of the port.

(e) Any person, contractor, firm or corporation who shall allow any petroleum product or any other oily substance to get into the waters of the Willamette River in any way must take immediate means to recover as much of said oily substance as possible by absorbing same into hay, straw, dry shavings or other bouyant substances which can be removed from the river and disposed of. Sinking same with sand, gravel or chemical compounds will not be allowed and the use of same will subject the party doing so to arrest.

Section 16-2551. GARBAGE NOT TO BE DUMPED.

No vessel or other watercraft shall dump garbage, dunnage, refuse, straw or other packing material into the waters or upon the banks of the stream within the city limits, but they shall keep them on board until after leaving the port or shall burn them in an incinerator, or dispose of same on shore. If at any time any communicable disease peculiar to animals is found to exist in any country or state from which cargo was received, no waste meterial in any manner whatsoever, shall be discharged. All garbage while on board ship shall be stored in metallic cans with tight fitting lids and must be hauled to an incinerator and burned. No such garbage may be sold or used for animal feed by any person, firm or corporation.

Section 16-2552. HANDLING OF LOOSE MATERIALS.

It shall be unlawful for any person, firm or corporation to throw, dump, deposit, unload, wash, flush, or by any other means allow any coal, ballast, ashes, sand, gravel, rock sawdust, ground fuel, dirt, earth, dust, chaff, vegetable, animal or fish parts, slabs, planks, timbers, dunnage, paper, metal, or loose products, or dredgings of any kind, or any other material, into the Willamette River, or upon the banks of the Willamette River in any manner whereby it may be washed into the river by high water or any other means. When such materials are being handled from ship, barge, or other floating object to shore, or from one floating object to another, a sufficient tarpaulin, plate, platform, or other kind of a jumper shall be placed, stretched, or spread, so as to prevent effectually any such material from falling into the waters of the port, except where the loose materials are being handled by a pipe, hose, tube, tight bucket, or other object, so that no part thereof is allowed to get into the waters of the port. No plant along the banks of the Willamette River shall allow any washings, screenings, or plant refuse of any kind whatsoever to get into the river if any such material will prove obnoxious or tend to fill in or obstruct the free flow of the said river. All concerns engaged in the removal of refuse of any kind from one place along the river to another, shall have suitable barges or boats with fixed bins, barricades or fences so that no part of any such refuse shall fall overboard while handling or mooring same. In the event any such material gets into the waters of the port, said material must be removed at once.

EXHIBIT 55
Page 1

COPY

Seattle, Washington
Ordinance No. 73578

AN ORDINANCE prohibiting sewerless houseboats on Lake Washington with certain exceptions of a temporary nature; defining offenses; and prescribing penalties.

WHEREAS, houseboats on the shores of Lake Washington used for human habitation and not connected with the city sewer system are dangerous to the public health because of the great number of public and private beaches and other recreational facilities thereon; and

WHEREAS, there now remain but few such houseboats so located and used and these should soon be removed and no more permitted;
Now, Therefore,

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. It shall be unlawful to use, occupy or let any houseboat for purposes of human habitation on Lake Washington within the City limits unless the same is lawfully and properly connected with the city sewer system and such connection is in proper working order and use at all times. Provided, that existing houseboats so located and used, and otherwise conforming to law, may be permitted until the cessation of hostilities in the existing war and six months thereafter, if they be equipped with and use exclusively from May 1 to September 30 of each year suitable chemical toilet facilities approved by the Commissioner of Health.

Section 2. It shall be the duty of the Commissioner of Health to enforce the provisions of this ordinance.

Section 3. Any violation or failure to comply with the provisions of this ordinance shall subject the offender upon conviction thereof to a fine not exceeding $300.00 or to imprisonment not exceeding 90 days, or both, and each day that such violation of or failure to comply continues shall constitute a separate offense.

Section 4. (30 day ending)

Passed the City Counvil the 23rd day of October, 1944.

EXHIBIT 56
Page 1

Seattle, Washington
Building Code

Chapter 3.74
(Ord. #82223)
Houseboats

Section 3.74.010 "Houseboat" defined. The term "houseboat" as used in this chapter means a building constructed on a float and not equipped with motive power used in whole or in part for human habitation, which is moored, anchored or otherwise secured in water within the city limits; and the purpose of this chapter is to implement existing laws which are deemed inadequate to protect the public peace, health, safety and welfare in respect to such buildings and structures.

Section 3.74.020 Distance between houseboats. There shall be a minimum distance of 10 feet between the sides of houseboats; and a minimum distance of 10 feet measured from the center line between the ends or rows of houseboats.

Section 3.74.030 Mooring. All houseboats shall be securely held in place by mooring piles or otherwise.

Section 3.74.040 Walkway or dock. A properly constructed and safe walk or walkway for ingress and egress to a lawfully located houseboat, or a dock for such purpose, is hereby required and may be constructed and maintained upon private property under permit from the Building Department and the same shall be considered a lawful appurtenant use to a houseboat.

Section 3.74.050 Location. No houseboat shall hereafter be located in any waterway or fairway, or in the public waters or in any street or street end.

Section 3.74.060 Zoning Limitations. All houseboat locations, unless otherwise zoned by ordinance of the city, shall be subject to the same zoning limitations as to use which pertain to the abutting upland property.

Section 3.74.070 Water Connections. All water pipes and connections serving houseboats shall be securely fastened and stabilized above the high water line to avoid contamination by connections submerged in contaminated water and all such pipes and connections shall comply with the ordinances relating thereto as to size and type, and the rules and regulations of the Seattle Water Department in connection therewith. In aid of the enforcement of this section the Superintendent of Lighting, the Director of Public Health the the Superintendent of Water shall notify the Building Department of all applications made to said department for service and no such installation shall be made by said departments until approved by the Building Department as to safety.

EXHIBIT 56
Page 2

Section 3.74.080 Garbage Disposal. Each houseboat shall be equipped with a suitable garbage can which shall be located in an accessible place at the houseboat location, and no garbage or refuse therefrom shall be thrown or dumped into the waters.

Section 3.74.090 Enforcement. It shall be the duty of the Superintendent of Buildings to enforce the provisions of this chapter pertaining to his department and shall be the duty of the heads of other departments concerned to enforce the provisions of other pertinent ordinances and to cooperate with the Superintendent of Buildings in the enforcement of this chapter.

Section 3.74.100 Penalty for violations. Any violation of or failure to comply with the provisions of this chapter shall subject the offender upon conviction to a fine not exceeding $300.00 or to imprisonment in the city jail for not more than 90 days, or to both such fine and imprisonment.

EXHIBIT 57
Page 1

WATER POLLUTION CONTROL REGULATIONS

(Adopted May 11, 1959
Idaho State Board of Health)

Preamble

It shall be the policy of the State Board of Health to provide for an orderly and economically feasible comprehensive water pollution control program, which program shall be administered to conserve the waters of the state for all legitimate beneficial uses, including uses for domestic purposes, agriculture, industry, recreation, and fish and wildlife propagation.

The Board recognizes that the control of water pollution involves many factors, including multiple water uses, economic considerations and over-all benefits to the citizens of the state. It shall be the policy of the Board to carry out such a program on a cooperative voluntary and educational basis insofar as such a policy is compatible with statutory duties of the Board.

The Department of Health shall, on the basis of necessary technical studies, determine waste treatment needs throughout the state and shall establish recommended time tables for the provision of such treatment facilities as will be necessary to abate pollution of the waters of the state.

Regulations

1. All wastes discharged to waters of the state shall be subjected to such treatment that they shall not create a health hazard or nuisance and such wastes shall not impair the quality or interfere, either directly or indirectly, with the treatment processes of any public water supply. Waters of the state shall include surface water and underground waters.

Minimum acceptable treatment for any waste shall be equivalent to the removal of readily settleable and floatable solids. Minimum treatment for waste containing domestic sewage shall include removal of readily settleable and floatable solids and effective disinfection.

2. The Department of Health shall adopt sewage works design standards, water quality objectives, and subsurface sewage disposal standards to be used as a guide in determining adequacy of proposed treatment and to be used as a guide in the review of plans for proposed treatment facilities. Plans for waste treatment facilities shall be submitted to the Department of Health for review and approval before construction is begun.

3. The Department of Health shall not grant approval to any new sewer system or major additions to any existing sewer system unless plans for such system or additions to such systems shall include the provision of adequate treatment facilities.

EXHIBIT 58
Page 1

State of Washington
POLLUTION CONTROL
COMMISSION

Chapter 216

Laws of 1945

(RCW 90.48)

SECTION 1. It is declared to be the public policy of the State of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the State of Washington.

SEC. 2. Whenever the word "person" is used in this act, it shall be construed to include any political subdivision, government agency, municipality, industry, public or private corporation, copartnership, association, firm, individual or any other entity whatsoever. Wherever the words "waters of the state" shall be used in this act, they shall be construed to include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.

SEC. 13. The Commission shall determine what qualities and properties of water shall indicate a polluted condition of such waters of the state, which is or may be deleterious to the public health; to the prosecution of any industries; to the lawful occupation on which or in which any such waters may be lawfully used; to the carrying on of any agricultural, or horticultural pursuit which may be injuriously affected; to the lawful conduct of any livestock industries; to the use of any such waters for domestic animals; to the lawful use of any such water by the State of Washington or any political subdivision, corporation, municipal corporation, association, partnership, person or any other legal entity; to any fish or other aquatic life, migratory bird life, beneficial animal or vegetable life in said waters which may be destroyed, or the growth or propagation thereof, which may be prevented or injuriously affected. Any such determination made by the Commission shall be filed of record in the office of the Commission.

EXHIBIT 58
Page 2

SEC. 14. It shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause a polluted condition of such waters, according to the determination of the Commission, as provided for in this act. The Commission is authorized to bring any appropriate action at law or in equity in the name of the people of the State of Washington, as may be necessary to carry out the provisions of this act.

EXHIBIT 58
Page 3

POLLUTION CONTROL COMMISSION
PERMITS FOR WASTE DISCHARGE

Chapter 71, Laws of 1955

SECTION 1. There is added to chapter 216, Laws of 1945, as amended by chapter 58, Laws of 1949, and chapter 90.48, RCW, a new section to read as follows:

Any person who conducts a commercial or industrial operation of any type which results in the disposal of solid or liquid waste material into the waters of the state shall procure a permit from the pollution control commission before disposing of such waste material, and any person who is, after the effective date of this act, disposing of waste material from a commercial or industrial operation into state waters shall, within one year after the effective date of this act, secure such a permit or cease disposing of such waste material: Provided, That except in case of an emergency affecting the public health, in case of a request for hearing or the taking of an appeal pursuant to RCW 90.48.130, such cessation shall be stayed pending such hearing or final determination by a court.

SEC. 2. There is added to chapter 216, Laws of 1945, as amended by chapter 58, Laws of 1949, and chapter 90.48, RCW, a new section to read as follows:

Applications for permits shall be made on forms prescribed by the commission and shall contain the name and address of the applicant, a description of his operations, the quantity and type of waste material sought to be disposed of, the proposed method of disposal, and any other relevant information deemed necessary by the commission.

SEC. 3. There is added to chapter 216, Laws of 1945, as amended by chapter 58, Laws of 1949, and chapter 90.48, RCW, a new section to read as follows:

The commission shall issue a permit unless it finds that the disposal of waste material as proposed in the application will unduly pollute the waters of the state in violation of the public policy declared in RCW 90.48.010. The commission shall have authority to specify conditions necessary to avoid such undue pollution in each permit under which waste material may be disposed of by the permittee. Permits may be temporary or permanent but shall not be valid for more than five years from date of issuance.

EXHIBIT 59
Page 1

ALASKA STATUTES

Chapter 05 of the Water Control Act

"Article 2. Prohibited Acts and Penalties.

"Sec. 46.05.160. Construction of certain facilities prohibited. No person may construct, extend, install or operate a sewage system or treatment works, or any part of a sewage system or treatment works until plans for it are submitted to the department for review, and the department approves them in writing and issues a written permit. The department may waive the requirement that plans be submitted to it.

"Sec. 46.05.170. Pollution prohibited. No person may pollute or add to the pollution of the waters of the State.

Chapter 10 of the Water Control Act

"Sec. 46.10.010. Nuisances. (a) A person is guilty of creating or maintaining a nuisance if he puts a dead animal carcass, or part of one, excrement, or a putrid, nauseaus, noisome, decaying, deleterious, or offensive substance into, or in any other manner befouls, pollutes, or impairs the quality of a spring, brook, creek, branch, well, or pond of water which is or may be used for domestic purposes. (b) A person who neglects or refuses to abate the nuisance upon order of a health officer is guilty of a misdemeanor.

As enacted

EXHIBIT 60
Page 1

HOUSE BILL No. 53

INTRODUCED BY ZIMMER, CHRISTIANSEN, MECCAGE, SMITH, DESCHAMPS, WATT.

A BILL FOR AN ACT ENTITLED: "AN ACT TO PREVENT WATER POLLUTION BY PROHIBITING THE DISCHARGE OF SEWAGE FROM VESSELS; AND AMENDING SECTION 69-3505, R. C. M. 1947."

Be It Enacted by the Legislative Assembly of the State of Montana:

Section 1. Section 69-3505, R. C. M. 1947 is amended to read as follows:

"69-3505. *(1)* Every vessel shall have aboard:

"*(a)* ~~(1)~~ One life preserver, buoyant vest, ring buoy or buoyant cushion of the type approved by the commandant of the United States coast guard in good and serviceable condition for each person on board, provided, in boats under twenty-six (26) feet in length, that any person or persons, twelve (12) years of age or younger, occupying a vessel while such vessel is in motion, shall have a life preserver of a type approved by the commandant of the United States coast guard securely fastened to his or her person.

"*(b)* ~~(2)~~ When in operation during hours of darkness, a light sufficient to make the motorboat's or vessel's presence and location known to any and all other vessels within a reasonable distance.

EXHIBIT 60
Page 2

“*(c)* ~~(3)~~ If carrying or using any inflammable or toxic fluid in any enclosure for any purpose, and if not an entirely open motorboat or vessel, an efficient natural or mechanical ventilation system which shall be capable of removing resulting gases prior to, and during the time such motor boat or vessel is occupied by any person.

“*(d)* ~~(4)~~ All motorboats shall carry the minimum number of coast guard approved hand portable fire extinguishers, the number of which is to be determined by the Montana fish and game commission or a coast guard approved fixed fire extinguishing system, except, that motorboats less than twenty-six (26) feet in length of open construction, propelled by outboard motors, and not carrying passengers for hire need not carry such portable fire extinguishers or fire extinguishing systems.

“*(e)* ~~(5)~~ Every motorboat or vessel shall have the carburetor or carburetors of every engine therein (except outboard motors) using gasoline as fuel, equipped with an efficient flame arrester, backfire trap, or other similar device.

“*(f)* ~~(6)~~ The board is hereby authorized to make rules and regulations modifying the equipment requirements contained in this section to the extent necessary to keep these requirements in conformity with the provisions of the federal navigation laws or with the navigation rules promulgated by the United States coast guard.

“*(g)* ~~(7)~~ No person shall operate or give permission for the operation of a vessel which is not equipped as required by this section or modification thereof.

“*(2) No vessel shall be equipped in a manner which will permit discharge of inadequately treated sewage into waters of this*

EXHIBIT 60
Page 3

state. No container of inadequately treated sewage shall be placed, left, or discharged in or near waters of this state by anyone at any time. All toilets located on any vessel operated on waters of this state shall have securely affixed to the interior discharge opening of them an operating treatment device or retaining tank meeting the standards established by the state board of health."

Section 2. No person shall discharge or cause, permit or suffer to be discharged, any garbage, refuse, waste or sewage from any boat into or upon the waters of any stream, river or lake within the boundaries of the State of Montana.

Section 3. A person who is convicted of a violation of this act shall be punished by a fine of not more than twenty-five dollars ($25.00).

House Bill No. 53

EXHIBIT 60
Page 4

November 12, 1965

Line 51, House Bill No. 51
"Standards Established by the State Board of Health"
The Following are these Standards:

STANDARDS FOR BOAT SEWAGE TREATMENT DEVICES AND SEWAGE RETAINING TANKS

1. **Boat sewage treatment devices which will discharge an effluent meeting the following minimum criteria are acceptable:**

    a. Free of unsightly floating solids.

    b. Has at least 80 percent of the five-day 20° C. biochemical oxygen demand and 95 percent of the settleable solids removed from the untreated wastes.

    c. Contains a most probable number (MPN) of coliform bacteria not exceeding 240 per hundred milliliters.

2. **Boat sewage retaining tanks which have no provision for discharge of sewage contents into the water are acceptable.**

EXHIBIT 61
Page 1

Chapter 362
(Senate Bill 185)
1965 Oregon Laws

Relating to discharge of garbage or sewage from buildings and structures; creating new provisions; amending ORS 431.130 and 449.990; and providing penalties.

Be It Enacted by the People of the State of Oregon:

Section 1. Section 2 of this Act is added to and made a part of ORS 449.015 to 449.135.

Section 2. (1) After September 1, 1967, and notwithstanding any other law or regulation of this state or political subdivision thereof to the contrary, no garbage or sewage shall be discharged into or in any other manner be allowed to enter the waters of the State of Oregon from any building or structure unless such garbage or sewage has been treated or otherwise disposed of in a manner approved by the State Board of Health and the Sanitary Authority of the State of Oregon. All plumbing fixtures in buildings or structures including prior existing plumbing fixtures from which waste water or sewage is or may be discharged, shall be connected to and all waste water or sewage from such fixtures in buildings or structures shall be discharged into a sewer system, septic tank system or other disposal system approved by the State Board of Health and the Sanitary Authority of the State of Oregon. For the purposes of this 1965 Act the term "buildings or structures" shall also include but is not limited to floating buildings and structures, houseboats, moorages, marinas, or any boat used as such; "sewage" means human excreta as well as kitchen, bath and laundry wastes; "garbage" means putrescible animal and vegetable wastes resulting from the handling, preparation, cooking, and serving of food.

(2) The Sanitary Authority may extend the time of compliance as set forth in subsection (1) of this section for any class of persons, municipalities or businesses upon such conditions as it may deem necessary to protect the public health and welfare if it is found that strict compliance would be unreasonable, unduly burdensome or impractical due to special physical conditions or cause or because no other alternative facility or method of handling is yet available.

Section 3. ORS 431.130 is amended to read:

431.130 (1) The State Board of Health shall in accordance with the provisions of ORS chapter 183, make such rules and regulations as, in its judgement are necessary for carrying out the provisions of section 2 of the 1965 Act.

Section 4. ORS 449.990 is amended to read:

449.990 (1) Violation of section 2 of this 1965 Act or of ORS 449.105, 449.125 to 449.135, 449.210 to 449.220, 449.220, 449.235 to 449.245, 449.325,

EXHIBIT 61
Page 2

449.395, 449.400, 449.545 or 449.575 is a misdemeanor and is punishable, upon conviction, as provided in ORS 431.990.

Oregon State Sanitary Authority 7-19-65

EXHIBIT 62
Page 1

State Marine Board Regulations [93]
State of Oregon

488.825 State Marine Board. (1) There hereby is created the State Marine Board consisting of five members to be appointed by the Governor and to serve at the pleasure of the Governor.

(2) Each member shall be a resident of this state, a citizen of the United States, and at the time of his appointment shall have resided in this state for at least one year.

488.830 Powers and duties of board. In addition to the powers and duties otherwise provided in this chapter, the board shall have the power and duty to:

(1) Make all rules and regulations necessary to carry out the provisions of this chapter. The rules and regulations shall be made in accordance with ORS chapter 183.

(2) Devise a system of identifying numbers for boats. If an agency of the Federal Government has an overall system of identification numbering for boats within the United States, the system devised by the board shall conform with the federal system.

(3) Cooperate with state and federal agencies to promote uniformity of the laws relating to boating and their enforcement.

(4) Make contracts necessary to carry out the provisions of ORS 488.705 to 488.730, 488.735 to 488.762, 488.780 to 488.820 and 488.825 to 488.870.

(5) Advise and assist county sheriffs and other peace officers in the enforcement of laws relating to boating.

(6) Study, plan, and recommend the development of boating facilities throughout the state which will promote the safety and pleasure of the public through boating.

(7) Publicize the advantage of safe boating.

(8) Accept gifts and grants of property and money to be used to further the purposes of this chapter.

(9) Exempt from any provisions of this chapter any class of boats if it determines that the safety of persons and property will not be materially promoted by the applicability of those provisions to the class of boats, but the board shall not exempt from numbering any class of boats unless it determines that the numbering will not materially aid in their identification and unless the secretary of the department

EXHIBIT 62

of the Federal Government under which the United States Coast Guard is operating has exempted from numbering the same boats or classes of boats.

(10) Appoint and require the bonding of agents to issue certificates of number or title. The agents may charge, in addition to the prescribed fees, 25 cents for their services in issuing a certificate of number, a certificate of title, or both.

(11) Publish and distribute to the interested public the boating laws of this state and resumes or explanations of those laws.

(12) Publish and distribute forms for any application required under this chapter and require the use of such forms.

(13) Make rules and regulations for the uniform navigational marking of the waters of this state. Such rules and regulations shall not conflict with markings prescribed by the United States Coast Guard. No political subdivision or person shall mark the waters of this state in any manner in conflict with the markings prescribed by the board.

(14) Make rules and regulations regarding marine toilets and their use consistent with the prevention and control of pollution of the waters of this state and not in conflict with the rules and regulations of the State Board of Health or the Sanitary Authority made under ORS chapter 449. The regulations may include sealing or otherwise rendering inoperative toilets not equipped with an approved device to render waste harmless.

(15) Institute proceedings to enjoin unlawful obstructions injuring free navigation on the waters of this state.

488.990 Penalties. (1) Violation of ORS 488.100 is a misdemeanor.

(2) Except as provided in subsection (1) of this section, violation of any provision of ORS 488.011 to 488.180 and 488.600 is punishable, upon conviction, by a fine not exceeding $100.00.

(3) Violation of subsection (1) of ORS 488.610 is punishable, upon conviction, by a fine of not more than $25.00, or by imprisonment in the county jail for not more than 30 days, or both.

(4) Violation of subsection (2) of ORS 488.610 is punishable, upon conviction, by a fine of not more than $100, or by imprisonment in the county jail for not more than 90 days.

(5) Violation of subsection (1) of ORS 488.620 is punishable, upon conviction, by a fine of not more than $50.

EXHIBIT 62
Page 3

(6) Violation of subsection (2) or (3) of ORS 488.620 is a misdemeanor.

(7) Violation of any provision of ORS 488.705 to 488.730, 488.735 to 488.762, 488.780 to 488.820 and 488.825 to 488.870 is punishable, upon conviction, by a fine of not more than $50, or by imprisonment in the county jail for not more than 30 days, or both.

EXHIBIT 63
Page 1

Boat Operations in Deschutes County, Oregon
Oregon State Marine Board

20 - 170 Boat Operations in Deschutes County.

(1) Marine Toilets. (a) No person shall maintain or operate upon the following-named inland waters of this state any boat which is equipped with a toilet unless such a toilet is rendered inoperative by having the discharge outlet effectively sealed. "An approved device" is a marine toilet, or a marine toilet attachment, which has been approved by the State Board of Health and the State Sanitary Authority.

Paulina Lake
East Lake
Elk Lake
Big Lava Lake
Wickiup Reservoir
Crane Prairie Reservoir
Big Cultus Lake
Little Cultus Lake

EXHIBIT 64
Page 1

United States
National Park Service
Code of Federal Regulations
Title 36 - Parks, Forests, and Memorials
Chapter 1

Section 1.7. SANITATION.

Section 1.7 Sanitation in part says:

(h) Garbage, litter or other waste shall not be dropped or thrown from vessels into park waters but shall be disposed of on shore at designated locations, in a manner prescribed by the superintendent.

(i) Wastes from toilets or galleys of vessels shall not be discharged within one-half mile of the low water line along any shore, or one-half mile from any water supply intake, and the superintendent may restrict any water area if a public health hazard develops or deterioration of esthetic value becomes apparent.

Section 2.11. SANITATION.

This section in part says:

(a) No garbage, papers, cans, bottles, or rubbish of any kind shall be thrown or dumped in the waters of the areas or along the roads, in picnicking or camping sites, or beaches, or on any other lands of the areas, but shall be burned or buried, or disposed of at points or places designated for the disposal thereof.

(e) Wastes from toilets or galleys on water-borne vessels shall not be discharged within one-half mile of boat landings, moorings, or other habitated facilities, except that at Coulee Dam Recreation Area, wastes of any kind may not be discharged into the lake.

(g) Garbage and refuse of all kinds from lake shore campsites shall be returned to the established boat harbor areas and deposited in receptacles provided for the purpose.

(h) The cleaning of fish is prohibited in or around designated public use areas except at authorized fish cleaning facilities when provided.

Section 3.17. WATER SANITATION.

(a) In fresh water, except the Great Lakes, the draining, dumping, or discharging of wastes or refuse, including human waste, into the waters from any vessel is prohibited.

EXHIBIT 64

(b) In salt water and in the Great Lakes, the draining, dumping, or discharging of wastes or refuse, including human waste, into the waters from any vessel within 1 mile from the nearest shore is prohibited.

(c) All vessels shall have a waste receptacle aboard. Receptacles shall be emptied only into facilities provided at docks or other specified places.

Certain rules and regulations are set forth in Part 7 and are specially promulgated by Superintendents of various National Parks and Monuments to implement the General Rules and Regulations of the National Park Service governing public water use. These rules apply only in the named National Parks and Monuments. The only item found specifically pertaining to boat related water pollution was the following, under SANITATION: "OLYMPIC NATIONAL PARK (Washington): The cleaning of fish in park waters or the depositing of fish entrails, heads, gills, or other refuse in park waters is prohibited."

EXHIBIT 65
Page 1

U. S. Forest Service
Regulations, U-6

Regulation U-6 authorizes the Forest Supervisor of a National Forest to restrict use of National Forest lands when deemed necessary to safeguard public health, welfare, safety, or convenience.

Diamond Lake is within the boundaries of the Umpqua National Forest and is a non-navigable lake entirely surrounded by National Forest. It has thus been adjudged subject to the jurisdiction of the Forest Service.

"By authority of the above regulation and as a means of safeguarding public health, welfare and safety, the 'heads' on cabin cruisers will be sealed before launching on Diamond Lake and kept sealed while on the lake, effective on and after July 16, 1962."

EXHIBIT 66
Page 1

U. S. Army, Corps of Engineers
Code of Federal Regulations
Title 36 - Parks, Forests, and Memorials
Chapter III

Section 311.3. BOATS AND OTHER VESSELS, PRIVATE.

(d) Boathouses, houseboats, cabin cruisers, and other vessels may be placed and operated on the reservoirs, except that such facility shall not be utilized for human habitation at a fixed or permanent mooring point and if equipped with toilets and galleys shall not be placed on reservoirs with small permanent pools. Such vessels may be barred from other reservoirs by the District Engineer with the concurrence of the Chief of Engineers in those reservoirs in which the waters thereof are used for domestic water supply when the District Engineer determines that such is contrary to the public health and safety.

Section 311.4. MOORING, CARE AND SANITATION OF BOATS AND FLOATING FACILITIES.

(c) The discharge of sewage, garbage or other pollutant in the waters of the reservoir from any boat, barge, or other vessel on the reservoir is prohibited except in accordance with regulations of the State and local health agencies permitting such discharge when underway in deep waters other than embayments. All such pollutants shall be deposited ashore at places designated for such deposit and disposal.

Section 311.13. SANITATION.

Refuse, garbage, rubbish or waste of any kind shall not be thrown on or along roads, picnicking or camping areas, in the reservoir waters or on any of the lands around the reservoir, but shall be burned or buried, or disposed of at designated points or places designated for the sanitary disposal thereof.

In addition to the previously cited sections, certain waters in Oregon and Washington are covered by additional regulations. Waters involved are:

Oregon

John Day Reservoir Area, Columbia River
McNary Reservoir Area, Columbia River

EXHIBIT 66
Page 2

Washington

John Day Reservoir Area, Columbia River
McNary Reservoir Area, Columbia River
Ice Harbor Reservoir Area, Snake River

Section 326.4. HOUSEBOATS.

(b) Refuse, garbage, rubbish, or waste of any kind shall be disposed of in the manner designated by the District Engineer or his authorized representative.

Section 326.13. SANITATION.

This section states that, "Refuse, garbage, rubbish, or waste of any kind shall not be thrown on or along roads, picnicking or camping areas, in the reservoir waters, or on any of the lands around the reservoir, but shall be burned or buried, or disposed of at designated points or places designated for the sanitary disposal thereof."

Department of the Army
Engineering Circular 1130-2-25,
Titled, Grants for Private Floating Facilities
at Water Resource Development Projects
November 17, 1966

(b) The use of boat mooring facilities will be limited to mooring of boats and storage of gear. The installation of sleeping accommodations, cooking facilities, heating facilities, toilet and shower facilities, refrigeration, television and other items conducive to human habitation in the facilities is prohibited.

Department of the Army
Engineer Regulation No. 1165-2-116
February 15, 1965
Titled, Water Resources Policies and Authorities,
Pollution Control

7. Corps Floating Plant.

Appropriate action will be taken to equip existing as well as new construction floating plant with adequate sanitary facilities. The Marine Design Division of the Philadelphia District has investigated and compiled a list of commerically produced systems which meet approved criteria for application to existing plant. Therefore, to assure the adequacy of equipment and compliance with current criteria any planned installation of sewage disposal systems on existing or new floating plant will be submitted to the Chief of Engineers (ENGCW-OS) for review and approval.

EXHIBIT 66
Page 3

9, e. All practical efforts should be made to encourage the owners of boats to withhold the discharge of pollutants including toilets into open waters.

EXHIBIT 67
Page 1

United States
River and Harbor Act of 3 March, 1899
33 U. S. Code 407

Section 13 provides in part "That it shall not be lawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited either from or out of any ship, barge, or other floating craft of any kind, or from the shore, wharf, manufacturing establishment, or mill of any kind, any refuse matter of any kind or description whatever other than that flowing from streets or sewers and passing therefrom in a liquid state, into any navigable water of the United States, or into any tributary of any navigable water from which the same shall float or be washed into such navigable water; and it shall not be lawful to deposit, or cause, suffer, or procure to be deposited material of any kind in any place on the bank of any navigable water; or on the bank of any tributary of any navigable water, where the same shall be liable to be washed into such navigable water.

EXHIBIT 68
Page 1

United States
Oil Pollution Act of 1924
33 U. S. Code 431-437

Section 433 of the Act provides that ". . . it shall be unlawful for any person to discharge, or suffer, or permit the discharge of oil by any method, means, or manner into or upon the coastal navigable waters of the United States from any vessel using oil as fuel for the generation of propulsion power, or any vessel carrying or having oil thereon in excess of that necessary for lubricating requirement and such as may be required under the laws of the United States and the rules and regulations prescribed thereunder . . ."

EXHIBIT 69
Page 1

SOPA Puget Sound Instruction P5400.1A
Emergency Sortie/Dispersal Plan
For The
Puget Sound Area

This SOPA (13th Naval District) regulation specifies that all ships shall comply with the provisions of the Oil Pollution Act of 1924, 33 U. S. Code Paragraph 431 - 437.

It additionally states that all ships shall comply with the following:

"a. State Law

(1) The Revised Code of Washington prohibits the discharge of polluting matter into all waters under the jurisdiction of the State of Washington.

(2) RCW 90.48.080 provides that, 'It shall be unlawful for any person to throw, drain, run or otherwise discharge into any of the waters of the state, or to cause, permit, or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any matters that shall cause or tend to cause a polluted condition of the waters according to the determination of the (state pollution control) commission . . .'

b. Procedures

(1) Vessels which, for purposes of loading cargo or any other reasons, will need to discharge oily ballast and oil sludge, oil refuse, or oily bilge water shall proceed as follows:

(a) Such vessels should discharge as much of the oily ballast as the requirements of safety and navigation will permit before entering coastal navigable waters.

(b) Oil refuse and oily bilge water should also be discharged in so far as possible before entering coastal navigable waters.

(c) Upon arrival in the harbor, such vessels should request that a barge be brought alongside to receive the remainder of the oily ballast, oily bilge water, fuel oil sludge, and oil refuse which it may be necessary to discharge.

(2) Bilges shall be pumped only in emergency. For his own protection, the commanding officer should station a deck watch to observe a possible resulting oil slick. Particular attention shall be given to the matter of pumping oily ballast water from District craft or other vessels. The prohibition applies alike to commercial and naval vessels. If disregard of this order should be noted by an addressee, he will report the occurrence to the District Commandant, to his commanding officer, and to the District Coast Guard Officer.

EXHIBIT 70
Page 1

SOR/65-264

CANADA SHIPPING ACT.

Oil Pollution Prevention Regulations, amended.

P.C. 1965-1131

AT THE GOVERNMENT HOUSE AT OTTAWA.

FRIDAY, the 18th day of JUNE, 1965.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 495A of the Canada Shipping Act, is pleased hereby to amend the Oil Pollution Prevention Regulations made by Order in Council P.C. 1960-166 of 11th February, 1960(1), as amended(2), in accordance with the schedule hereto.

SCHEDULE.

1. Sections 18 and 19 of the *Oil Pollution Prevention Regulations* are revoked and the following substituted therefor:

> "18. Where oil or an oily mixture is discharged or allowed to escape from a ship contrary to these Regulations, the owner and master of the ship as well as the person directly responsible for the discharge or escape thereof is guilty of an offence and is liable on summary conviction to a fine not exceeding five thousand dollars or a term of imprisonment not exceeding six months or both fine and imprisonment.
>
> 19. Every person who contravenes or fails to comply with any of these Regulations is guilty of an offence and is liable on summary conviction to a fine not exceeding five thousand dollars or to a term of imprisonment not exceeding six months or both fine and imprisonment."

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(1) SOR/60-70, CANADA GAZETTE PART II, Vol. 94, No. 4, Feb. 24, 1960
(2) SOR/65-57, CANADA GAZETTE PART II, Vol. 99, No. 3, Feb. 10, 1965

ROGER DUHAMEL, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1965

EXHIBIT 70
Page 2

SOR/65-57

CANADA SHIPPING ACT.

Oil Pollution Prevention Regulations, amended.

P.C. 1965-160

AT THE GOVERNMENT HOUSE AT OTTAWA.

THURSDAY, the 28th day of JANUARY, 1965.

PRESENT:
HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 495A of the Canada Shipping Act, is pleased hereby to amend the Oil Pollution Prevention Regulations made by Order in Council P.C. 1960-166 of 11th February, 1960(1), as amended(2), in accordance with the schedule hereto.

SCHEDULE.

1. (1) Section 2 of the *Oil Pollution Prevention Regulations* is amended by adding thereto, immediately after paragraph (*a*) thereof, the following paragraph:

"(*ab*) "diesel oil" means any diesel fuel oil that comes within the classification known as Designation D 975 established by the American Society for Testing Materials;"

(2) Subparagraph (i) of paragraph (*d*) of section 2 of the said Regulations is revoked and the following substituted therefor:

"(i) for the purposes of Parts I, III and IV, crude oil, fuel oil, diesel oil, lubricating oil, vegetable oil, fish and other fatty oils, and"

2. All that portion of section 13 of the said Regulations preceding paragraph (*a*) thereof is revoked and the following substituted therefor:

"13. Sections 11 and 12 do not apply to any ship within the waters of Canada of less than one hundred and fifty tons, gross tonnage, that"

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(1) SOR/60-70, CANADA GAZETTE PART II, Vol. 94, No. 9, Feb. 24, 1960
(2) SOR/64-352, CANADA GAZETTE PART II, Vol. 98, No. 17, Sept. 9, 1964

ROGER DUHAMEL, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1965

EXHIBIT 70
Page 3

SEPTEMBER 9, 1964
No. 17

THE CANADA GAZETTE PART II
VOLUME 98

SOR/64
352

SOR/64-352

CANADA SHIPPING ACT.

Oil Pollution Prevention Regulations, amended.

P.C. 1964-1324

AT THE GOVERNMENT HOUSE AT OTTAWA.

TUESDAY, the 25th day of AUGUST, 1964.

PRESENT:
HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 495A of the Canada Shipping Act, is pleased hereby to amend the Oil Pollution Prevention Regulations made by Order in Council P.C. 1960-166 of 11th February, 1960(1), as amended(2), in accordance with the schedule hereto.

SCHEDULE.

1. Paragraph (b) of section 2 of the *Oil Pollution Prevention Regulations* is revoked and the following substituted therefor:

> "(*b*) "heavy diesel oil" means marine diesel oil, other than a distillate more than fifty per cent by volume of which distils at a temperature not exceeding 340°C. when tested by the American Society for Testing Materials, Standard Method D. 158/54;"

2. Sections 18 and 19 of the said Regulations are revoked and the following substituted therefor:

> "18. Where oil or an oily mixture is discharged or allowed to escape from a ship contrary to these Regulations, the owner and master of the ship as well as the person directly responsible for the discharge or escape thereof is guilty of an offence and is liable on summary conviction to a fine not exceeding five hundred dollars or a term of imprisonment not exceeding six months or both fine and imprisonment.
>
> 19. Every person who contravenes or fails to comply with any of these Regulations is guilty of an offence and is liable on summary conviction to a fine not exceeding five hundred dollars or to a term of imprisonment not exceeding six months or both fine and imprisonment."

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(1) SOR/60-70, CANADA GAZETTE PART II, Vol. 94, No. 4, Feb. 24, 1960
(2) SOR/62-243, CANADA GAZETTE PART II, Vol. 96, No. 14, July 25, 1962

ROGER DUHAMEL, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1964

EXHIBIT 70
Page 4

JULY 25, 1962 No. 14
THE CANADA GAZETTE PART II VOLUME 96
SOR/62 243

SOR/62-243

CANADA SHIPPING ACT

Oil Pollution Prevention Regulations, amended

P.C. 1962-937

AT THE GOVERNMENT HOUSE AT OTTAWA

WEDNESDAY, the 4th day of JULY, 1962.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 495A of the Canada Shipping Act, is pleased hereby to amend the Oil Pollution Prevention Regulations made by Order in Council P.C. 1960-166 of 11th February, 1960(1), as amended(2), in accordance with the Schedule hereto.

SCHEDULE

1. The *Oil Pollution Prevention Regulations* are amended by adding thereto, immediately after section 3 thereof, the following section:

> "3A. Every ship while engaged in refuelling with oil, or transferring oil by any means within the ship, shall have the scuppers plugged to prevent the escape of any oil from the ship."

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(1) SOR/60-70, CANADA GAZETTE PART II, Vol. 94, No. 4, Feb. 24, 1960
(2) SOR/61-339, CANADA GAZETTE PART II, Vol. 95, No. 17, Sept. 13, 1961

ROGER DUHAMEL, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1962

EXHIBIT 70
Page 5

SOR/61-389

CANADA SHIPPING ACT

Oil Pollution Prevention Regulations, amended

P.C. 1961-1247

AT THE GOVERNMENT HOUSE AT OTTAWA

THURSDAY, the 31st day of AUGUST, 1961.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 495A of the Canada Shipping Act, is pleased hereby to amend the Oil Pollution Prevention Regulations made by Order in Council P.C. 1960-166 of 11th February 1960(1), in accordance with the schedule hereto.

SCHEDULE

1. The *Oil Pollution Prevention Regulations* are amended by adding thereto, immediately after paragraph *(d)* of section 1 of Schedule A thereof, the following paragraph:

"*(e) The Canadian Zone*

The Canadian Zone shall extend for a distance of 100 miles from the Atlantic Coast of Canada."

2. The said Regulations are further amended by adding thereto, immediately after paragraph *(b)* of section 2 of Schedule A thereof, the following paragraph:

"*(c) The Canadian Zone*

The Canadian Zone shall extend for a distance of 100 miles from the Atlantic Coast of Canada."

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(1) SOR/60-70, CANADA GAZETTE PART II, Vol. 94, No. 4, Feb. 24, 1960.

ROGER DUHAMEL, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1961

EXHIBIT 70
Page 6

SOR/60-70

CANADA SHIPPING ACT

Oil Pollution Prevention Regulations

P.C. 1960-166

AT THE GOVERNMENT HOUSE AT OTTAWA

THURSDAY, the 11th day of FEBRUARY, 1960.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 495A of the Canada Shipping Act, is pleased hereby to revoke the Oil Pollution Prevention Regulations made by Order in Council P.C. 1957-392 of 21st March, 1957(1), as amended(2), and to make the annexed Oil Pollution Prevention Regulations in substitution therefor.

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(1) SOR/57-107, CANADA GAZETTE PART II, Vol. 91, No. 7, April 10, 1957
(2) SOR/57-368, CANADA GAZETTE PART II, Vol. 91, No. 18, Sept. 25, 1957

EXHIBIT 70
Page 7

REGULATIONS RESPECTING THE PREVENTION OF THE POLLUTION BY OIL FROM SHIPS OF THE SEA AND OF THE INLAND, MINOR AND OTHER WATERS OF CANADA

Short Title

1. These Regulations may be cited as the *Oil Pollution Prevention Regulations.*

Interpretation

2. In these Regulations,

(*a*) "Canadian Pollution Convention Ship" means a ship registered in Canada other than
  (i) a ship under five hundred tons gross tonnage, or
  (ii) a ship engaged in the whaling industry;

(*b*) "heavy diesel oil" means marine diesel oil, other than a distillate, more than fifty per cent by volume of which distils at a temperature not exceeding 340°C. when tested by the American Society for Testing Materials, Standard Method D. 158/54;

(*c*) "Inspector" means a person designated as an Inspector pursuant to section 15;

(*d*) "oil" means
  (i) for the purposes of Parts I, III and IV, crude oil, fuel oil, heavy diesel oil, lubricating oil, vegetable oil, fish and other fatty oils, and
  (ii) for the purposes of Part II, crude oil, fuel oil, heavy diesel oil and lubricating oil; and

(*e*) "ship" includes every description of vessel, lighter or barge used in navigation that carries oil as a fuel or cargo but does not include any ship belonging to or under charter to Her Majesty.

PART I

Waters of Canada

3. This Part applies to ships of every nationality while they are in the inland, minor or other waters of Canada.

4. (1) Subject to section 5, no person shall discharge or allow to escape from a ship into the inland, minor or other waters of Canada any oil or oily mixture that fouls the surface of the water.

(2) For the purposes of this section, the discharge or escape of a mixture containing one hundred parts or more of oil in a million parts of the mixture shall be deemed to foul the surface of the water.

5. Subsection (1) of section 4 does not apply to a person who

(*a*) discharges from the bilges of a ship a mixture containing no oil other than lubricating oil that has not been used in or taken from the crank case of a diesel engine,

EXHIBIT 70
Page 8

(*b*) discharges or allows to escape from a ship oil or a mixture containing oil for the purpose of securing the safety of the ship, preventing damage to the ship or its cargo or saving life, or

(*c*) allows the escape of oil or a mixture containing oil from a ship by reason of damage or unavoidable leakage if all reasonable precautions have been taken after the occurrence of the damage or discovery of the leakage to prevent or minimize its escape.

PART II

Foreign Waters

6. This Part applies to all Canadian Pollution Convention Ships while navigating the prohibited zones described in the Schedules hereto.

7. (1) No person shall discharge from a Canadian Pollution Convention Ship, other than a tanker within any of the prohibited zones described in section 2 of Schedule A any oil or oily mixture that fouls the surface of the sea.

(2) Subsection (1) does not apply to the discharge of oil or any oily mixture from a Canadian Pollution Convention Ship, other than a tanker, proceeding to a port that is not provided with facilities adequate for the reception of such residues from oily ballast water and tank washings as would remain for disposal from ships other than tankers if the water had been separated by the use of an oily water separator, a settling tank or other similar device.

8. (1) No person shall discharge from a Canadian Pollution Convention Ship that is a tanker within any of the prohibited zones referred to in section 1 of Schedule A any oil or oily mixture that fouls the surface of the sea.

(2) Subsection (1) does not apply to a person who discharges from a tanker, as far as practicable from land, sediment that cannot be pumped from the cargo tanks thereof by reason of its solidity or the residue arising from the purification or clarification of fuel oil or lubricating oil.

9. For the purposes of this Part, the discharge of a mixture into the sea containing one hundred parts or more of oil in a million parts of the mixture shall be deemed to foul the surface of the sea.

10. Subsection (1) of section 7 and subsection (1) of section 8 do not apply to a person who,

(*a*) discharges from the bilges of a ship a mixture containing no oil other than lubricating oil that has not been used in or taken from the crank case of a diesel engine,

(*b*) discharges or allows to escape from a ship oil or a mixture containing oil for the purpose of securing the safety of the ship, preventing damage to the ship or its cargo or saving life,

EXHIBIT 70
Page 9

(*c*) allows the escape of oil or a mixture containing oil from a ship by reason of damage or unavoidable leakage if all reasonable precautions have been taken after the occurrence of the damage or discovery of the leakage to prevent or minimize its escape, or

(*d*) discharges from a ship any oil or oily mixture prior to the 26th day of July, 1961, if the discharge is made as far as practicable from land.

PART III

General

11. (1) Every ship registered in Canada and every ship registered elsewhere than in Canada that is operating in the inland, minor or other waters of Canada shall, if it carries oil as a fuel or cargo, carry an oil record book either as part of the ship's official log or otherwise in the form specified in Schedule B.

(2) The master of every ship mentioned in subsection (1) shall ensure that appropriate entries are made in the oil record book of his ship and that each page thereof is signed by himself and by the officer or officers in charge of the operations for which the entry is made.

(3) In the event of a discharge or escape of oil or mixture containing oil under any of the circumstances set forth in paragraphs (*b*) or (*c*) of section 5 or 10 the master of the ship shall make an entry in the oil record or log book of the ship stating the circumstances of and the reason for such discharge or escape and shall immediately inform the Minister of Transport.

12. The master of every ship registered in Canada that carries oil as a fuel or cargo shall ensure that all flexible hose on the ship used in transferring oil is tested annually and that the date of such tests and the results thereof are recorded in the oil record book of the ship.

13. Sections 11 and 12 of these Regulations do not apply to any ship within the waters of Canada of less than eighty tons, gross tonnage, that

(*a*) does not carry oil as a cargo; and

(*b*) is not fitted with tanks that may be used alternatively for oil or water ballast.

14. All ships registered in Canada that carry oil as a fuel or cargo shall be fitted so as

(*a*) to prevent any oil other than lubricating oil from leaking or draining into the bilge, or

(*b*) to separate oil other than lubricating oil from the water discharged from the bilges.

PART IV

Enforcement

15. (1) The Minister may designate any member of the Public Service of Canada or the Royal Canadian Mounted Police or of a provincial, municipal or harbour police force as an Inspector for the purposes of these Regulations.

EXHIBIT 70
Page 10

(2) An Inspector may board any ship within the inland, minor or other waters of Canada and may

(a) inspect the ship or any part thereof,
(b) require the production of the oil record or log book of such ship,
(c) require the master or person by whom the oil record or log book is kept to furnish him with a true copy of any entry therein,
(d) take a sample of oil from any ship,
(e) examine the owner, master or any member of the crew respecting any violation or suspected violation of these Regulations,
(f) investigate the circumstances relating to an alleged discharge of oil or an oily mixture from any ship within the prohibited zones referred to in Schedule A or within the inland, minor or other waters of Canada, and
(g) ask any pertinent questions and demand all reasonable assistance from the owner, master or person in charge of that ship.

16. (1) No person shall obstruct or hinder an Inspector in the carrying out of his duties or functions under these Regulations.

(2) No person shall make a false or misleading statement either verbally or in writing to an Inspector engaged in the carrying out of his duties or functions under these Regulations.

(3) Every person shall give an Inspector all reasonable assistance that he may request to enable him to carry out his duties and functions under these Regulations.

17. (1) Every person who has been required by an Inspector to produce a ship's oil record or log book or to furnish a true copy of any entry therein shall do as he is required.

(2) In any prosecution under these Regulations a copy of an entry in the oil record or log book certified to be a true copy thereof by the person required to keep such records, the master of the ship or an Inspector is receivable in evidence and is *prima facie* proof of the statement contained therein without other proof thereof.

18. Where oil or any oily mixture is discharged or allowed to escape from a ship contrary to these Regulations the owner or master of the ship as well as the person directly responsible for the discharge or escape thereof is liable to the penalties prescribed by these Regulations.

19. Every person who contravenes or fails to comply with any of these Regulations is liable on summary conviction to a fine not exceeding five hundred dollars or a term of imprisonment not exceeding six months or both fine and imprisonment.

EXHIBIT 70
Page 11

Schedule A

PROHIBITED ZONES FOR CANADIAN POLLUTION CONVENTION SHIPS

1. Prohibited zones for Canadian Pollution Convention Ships that are tankers.

The prohibited zones in relation to tankers are all sea areas within fifty miles from land that are not waters of Canada with the following exceptions:

(*a*) *The Adriatic Zones*

Within the Adriatic Sea the prohibited zones off the coast of Italy and Yugoslavia respectively shall each extend for a distance of 30 miles from land, excepting only the island of Vis.

(*b*) *The North Sea Zone*

The North Sea Zone shall extend for a distance of 100 miles from the coasts of the following countries:

Belgium,
Denmark,
the Federal Republic of Germany,
the Netherlands,
the United Kingdom of Great Britain and Northern Ireland,

but not beyond the point where the limit of a 100-mile zone off the west coast of Jutland intersects the limit of the 50-mile zone off the coast of Norway.

(*c*) *The Atlantic Zone*

The Atlantic Zone shall be within a line drawn from a point on the Greenwich meridian 100 miles in a north-north-easterly direction from the Shetland Islands; thence northwards along the Greenwich meridian to latitude 64° north; then westwards along the 64th parallel to longitude 10° west; thence to latitude 60° north, longitude 14° west; thence to latitude 54° 30′ north, longitude 30° west; thence to latitude 44° 20′ north, longitude 30° west; thence to latitude 48° north, longitude 14° west; thence eastwards along the 48th parallel to a point of intersection with the 50-mile zone off the coast of France. Provided that in relation to voyages which do not extend seawards beyond the Atlantic Zone as defined above, and which are to ports not provided with adequate facilities for the reception of oily residue, the Atlantic Zone shall be deemed to terminate at a distance of 100 miles from land.

(*d*) *The Australian Zone*

The Australian Zone shall extend for a distance of 150 miles from the coasts of Australia, except off the north and west coasts of the Australian mainland between the point opposite Thursday Island and the point on the west coast at 20° south latitude.

EXHIBIT 70
Page 12

2. Prohibited zones for Canadian Pollution Convention Ships other than tankers.

The prohibited zones in relation to ships, other than tankers, are all sea areas within fifty miles from land that are not waters of Canada with the following exceptions:

(*a*) *The Adriatic Zones*
Within the Adriatic Sea the prohibited zones off the coasts of Italy and Yugoslavia respectively shall each extend for a distance of 20 miles from land, excepting only the island of Vis.

(*b*) *The North Sea and Atlantic Zones*
The North Sea and Atlantic Zones shall extend for a distance of 100 miles from the coasts of the following countries:

Belgium,
Denmark,
the Federal Republic of Germany,
Ireland,
the Netherlands,
the United Kingdom of Great Britain and Northern Ireland,

but not beyond the point where the limit of a 100-mile zone off the west coast of Jutland intersects the limit of the 50-mile zone off the coast of Norway.

EXHIBIT 70
Page 13

Schedule B

FORM OF OIL RECORD BOOK FOR SHIPS OTHER THAN TANKERS

DATE OF ENTRY					
1. BALLASTING, OR CLEANING DURING VOYAGE, OF BUNKER FUEL TANKS					
(a) Identity numbers of tank(s)					
(b) Type of oil previously contained in tank(s)					
(c) Date and place of ballasting					
(d) Date and time of discharge of ballast or washing water					
(e) Place or position of ship					
(f) Whether separator used; if so, give period of use					
(g) Disposal of oily residue retained on board					
2. DISPOSAL FROM SHIP OF OILY RESIDUES FROM BUNKER FUEL TANKS AND OTHER SOURCES					
(a) Date and method of disposal					
(b) Place or position of ship					
(c) Sources and approximate quantities					
3. ACCIDENTAL AND OTHER EXCEPTIONAL DISCHARGES OR ESCAPES OF OIL					
(a) Date and time of occurrence					
(b) Place or position of ship					
(c) Approximate quantity and type of oil					
(d) Circumstances of discharge or escape and general remarks					

____________________Signature of Officer or Officers in charge of the operations concerned.

____________________Signature of Master

EXHIBIT 70
Page 14

Schedule B *(Continued)*

Form of Oil Record Book for Tankers

DATE OF ENTRY					
1. Ballasting of and discharge of ballast from cargo tanks					
(a) Identity numbers of tank(s)..........					
(b) Type of oil previously contained in tank(s)..........................					
(c) Date and place of ballasting..........					
(d) Date and time of discharge of ballast water..........................					
(e) Place or position of ship..............					
(f) Approximate amount of oil-contaminated water transferred to slop tank(s)..........................					
(g) Identity numbers of slop tank(s)......					
2. Cleaning of cargo tanks					
(a) Identity numbers of tank(s) cleaned...					
(b) Type of oil previously contained in tank(s)..........................					
(c) Identity numbers of slop tank(s) to which washings transferred.......					
(d) Dates and times of cleaning..........					
3. Settling in slop tank(s) and discharge of water					
(a) Identity numbers of slop tank(s)......					
(b) Period of settling (in hours)..........					
(c) Date and time of discharge of water..					
(d) Place or position of ship..............					
(e) Approximate quantities of residue.....					

EXHIBIT 70
Page 15

Schedule B (*Concluded*)

FORM OF OIL RECORD BOOK FOR TANKERS (*Concluded*)

DATE OF ENTRY					
4. DISPOSAL FROM SHIP OF OILY RESIDUES FROM SLOP TANKS AND OTHER SOURCES					
(*a*) Date and method of disposal.........					
(*b*) Place or position of ship..............					
(*c*) Sources and approximate quantities...					
5. ACCIDENTAL AND OTHER EXCEPTIONAL DISCHARGES OR ESCAPES OF OIL					
(*a*) Date and time of occurrence..........					
(*b*) Place or position of ship..............					
(*c*) Approximate quantity and type of oil.					
(*d*) Circumstances of discharge or escape and general remarks.............					

————————————Signature of Officer or Officers in charge of the operations concerned.

————————————Signature of Master.

The Queen's Printer and Controller of Stationery, Ottawa, 1960

EXHIBIT 71
Page 1

MODEL ACT ON SEWAGE DISPOSAL FROM BOATS

Outboard Boating Club of America
307 N. Michigan Avenue
Chicago 1, Illinois

A UNIT OF THE OUTBOARD BOATING CODE

All those who are interested in pleasure boating have a stake in keeping our waterways free of pollution. Waters which are clean, clear and sparkling are the most attractive and afford the greatest satisfaction.

Water pollution results from industrial waste and municipal sewage which have been inadequately treated (or treated not at all). In the total picture, pollution from the use of toilets on pleasure craft is almost an infinitesimal factor. Yet we recognize that in areas of extreme congestion, unregulated disposal of wastes from boats can be annoying.

The problem ordinarily is present only in busy harbors, mooring areas immediately adjacent to swimming beaches, and small lakes with many residences on the shoreline. For such places there is a solution in the form of a reasonable regulation. This model law is the suggested form of such a regulation.

There are now available inexpensive devices which can be attached to marine toilets which effectively prevent pollution. These make unnecessary the adoption of a harsh rule requiring the sealing of all boat toilets within certain areas.

The following model law is based substantially upon a law passed by the state of New Hampshire in 1957 and which took effect December 31, 1958. This statute was in turn endorsed by the Council of State Governments, a non-partisan organization supported by all of the states devoted to the improvement of state government. As an introduction to the statute which was suggested be adopted by all of the other states, the Council said:

> "The popularity of cabin cruisers and houseboats has shown a marked increase in recent years. Such craft are capable of handling a number of passengers and can lodge them with reasonable comfort for extended periods of time. This leads to the creation of a sewage disposal problem, perhaps small when there are few boats on a large body of water, but of much more serious proportions when the water area is a small lake or if the number of boats becomes large.
>
> "In some of the states, recreation and vacation facilities have become a major industry. Lakes and rivers that are primary attractions among such facilities, if polluted, may unfortunately lose their attractiveness and become a positive menace. Hence the need for early and effective action against potential blight caused by careless sewage disposal."

The New Hampshire statute upon which the following model is based also has the endorsement of the New England Water Pollution Control Commission.

TITLE

An Act relative to marine toilets and disposal of sewage from boats.

> The technical requirements of what must be included in the title vary from state to state. These requirements must be adhered to exactly or the statute will be held to be invalid by the courts.

SECTION 1.

DEFINITIONS

The term "watercraft" means any contrivance used or designed for navigation on water.

The term "sewage" means all human body wastes.

The term "marine toilet" means any toilet on or within any watercraft.

The term "waters of this state" means all of the waterways on which watercraft shall be used or operated.

> *NOTE: In some states it may be desired to limit the application of this act to certain waters only and thereby exempt large bodies of water where there is no conceivable boat pollution problem. The affected areas could be listed or the Commission be authorized to make a finding that a particular waterway should or should not be covered by the act.*

The term "Commission" means the (here enumerate the state agency which shall administer this act).

> *The choice of agency is of course a matter for each state to decide for itself. It is recommended, however, that consideration be given to the state agency dealing with water pollution problems in general.*

The term "Department" means the (here insert state agency which issues certificates of number for pleasure boats).

SECTION 2.

MARINE TOILETS—RESTRICTIONS

No marine toilet on any watercraft operated upon waters of this state shall be so constructed and operated as to discharge any inadequately treated sewage into said waters directly or indirectly. No watercraft shall be so equipped as to permit discharge from or through

EXHIBIT 71
Page 3

in marine toilet, or in any other manner, of any inadequately treated sewage at any time into the waters of this state, nor shall any container of such inadequately treated sewage be placed, left, discharged or caused to be placed, left or discharged in or near any waters of this state by any person at any time, whether or not the owner, operator, guest or occupant of a watercraft.

This section prohibits the discharge of any untreated sewage.

SECTION 3
MARINE TOILETS—MANNER OF OPERATION

Every marine toilet on or within any watercraft operated on waters of this state shall have securely affixed to the interior discharge opening of such toilet a suitable treatment device in operating condition, constructed and fastened in accordance with regulations of the Commission, or some other treatment facility or method established by regulation of the Commission. All sewage passing into or through such marine toilets shall pass entirely through such devices. The Commission shall have authority to carry out the provisions of this act by appropriate regulations.

As previously noted, these treatment devices are now available at very moderate cost. With further improvements likely in the near future, it is unwise to "freeze" any particular specifications for such a device in the statute. All technological changes can be readily incorporated into rules and regulations. Note that the basic idea behind these devices is not patentable.

SECTION 4
LOCAL REGULATIONS PROHIBITED

Through the passage of this act, the state fully reserves to itself the exclusive right to control the discharge of sewage from marine toilets.

With this law on the statute books of the state, there is no need for any additional or differing local rules. The latter could only serve to confuse and harass the boating public.

SECTION 5
INSPECTION

All watercraft located upon waters of this state shall be subject to inspection by the Commission or any lawfully designated agent or inspector thereof at any time for the purpose of determining whether such watercraft is equipped in compliance herewith.

SECTION 6
CERTIFICATE OF NUMBER

The Department may require persons making application for a certificate of number for a watercraft pursuant to (here give statutory citation to state Boat Numbering Act) to disclose whether such watercraft has within or on it a marine toilet, and if so, whether such marine toilet is adequately equipped with a treatment device securely affixed thereto as required by this act. The Department is further empowered to refuse to issue a certificate of number or a renewal thereof if such treatment device has not been affixed as required by this act.

SECTION 7
PENALTY

Any person who violates any of the provisions of this act or regulations of the Commission promulgated hereunder shall be deemed guilty of a misdemeanor and upon conviction shall be punished with a fine of not more than $100, or by imprisonment of not more than 30 days, or by both such fine and imprisonment at the discretion to the court.

SECTION 8
FILING OF REGULATIONS

A copy of the regulations adopted pursuant to this act, and any of the amendments thereto, shall be filed in the office of the Commission and in the office of the (official state record keeping agency). Rules and regulations shall be published by the Commission in a convenient form.

SECTION 9
SAVINGS CLAUSE

If any court shall find any section or sections of this act to be unconstitutional or otherwise invalid, such findings shall not affect the validity of any sections of this act which can be given effect.

SECTION 10
EFFECTIVE DATE

The effective date of this act shall be...............

It is suggested that the effective date of this act be delayed so that all persons affected by its provisions will have a reasonable amount of time to become acquainted with it and secure the required treatment device.

EXHIBIT 72
Page 1

A MODEL ACT TO PROHIBIT LITTERING AND THE DISPOSAL OF UNTREATED SEWAGE FROM BOATS [94]

TITLE

An Act to regulate the disposal of sewage from watercraft and to prohibit littering of waterways

§ 1. DEFINITIONS

For purposes of this Act, unless the context clearly requires a different meaning:

(a) The term "watercraft" means any contrivance used or capable of being used for navigation upon water whether or not capable of self-propulsion, except passenger or cargo-carrying vessels subject to the Interstate Quarantine Regulations of the United States Public Health Service adopted pursuant to Title 42 United States Code § 241 and 243.

(b) The term "sewage" means all human body wastes.

(c) The term "litter" means any bottles, glass, crockery, cans, scrap metal, junk, paper, garbage, rubbish, or similar refuse discarded as no longer useful or useable.

(d) The term "marine toilet" means any toilet on or within any watercraft to discharge waste.

(e) The term "waters of this State" means all of the waterways on which watercraft shall be used or operated.

> Note: In some states it may be desired to limit the application of this Act to certain waters only and thereby exempt large bodies of water or water areas that are remote from population centers and on which there is no congestion and no conceivable boat pollution problem. The waters subject to pollution control under this Act could be enumerated or the state agency which is designated to administer the Act could be authorized to make a finding that a particular waterway should or should not be affected.

(f) The term "person" means an individual, partnership, firm, corporation, association, or other entity.

(g) The term "Department" means the (name of the State agency which shall administer this Act).

EXHIBIT 72
Page 2

The choice of agency lies within the discretion of each state. It is recommended, however, that consideration be given to the state agency dealing with boating matters in general.

§ 2. LITTERING OR POLLUTING WATER - RESTRICTIONS

(a) No person shall place, throw, deposit, or discharge, or cause to be placed, thrown, deposited, or discharged into the waters of this State, any litter, sewage, or other liquid or solid materials which render the water unsightly, noxious or otherwise unwholesome so as to be detrimental to the public health or welfare or to the enjoyment of the water for recreational purposes.

(b) It shall be unlawful to discharge, dump, deposit or throw garbage into the waters of this State from a watercraft engaged in commerce.

This section is deemed sufficiently broad and flexible to prohibit any act committed on shore, in the water, or from aboard any description of watercraft, which litters or tends to pollute the water.

§ 3. MARINE TOILETS - RESTRICTIONS

(a) No marine toilet on any watercraft used or operated upon waters of this State shall be operated so as to discharge any untreated sewage into said waters directly or indirectly.

(b) No person owning or operating a watercraft with a marine toilet shall use, or permit the use of, such toilet on the waters of this State, unless the toilet is equipped with facilities that will adequately treat, hold, incinerate or otherwise handle sewage in a manner that is capable of preventing water pollution.

(c) No container of sewage shall be placed, left, discharged or caused to be placed, left or discharged in or near any waters of this State by any person at any time.

This section prohibits the discharge of any untreated sewage from marine toilets.

§ 4. MARINE TOILETS - POLLUTION CONTROL DEVICES

(a) After the effective date of this Act every marine toilet on watercraft used or operated upon the waters of this State shall be equipped with a suitable pollution control device in operating condition.

(b) Pollution control devices that are acceptable for purposes of this Act are:

1. Facilities that macerate or grind sewage solids and which, by chlorination or other means, disinfect the remnants before discharge into the water.

2. Holding tanks which retain toilet wastes for disposal at dockside or on-shore pumping facilities or in deep waters away from shore.

3. Incinerating type devices which reduce toilet wastes to ash.

4. Any other device that is tested by a recognized testing laboratory and determined to be effective in arresting the possibility of pollution from sewage passing into or through marine toilets.

This section recognizes that there are a variety of devices on the market designed to eliminate the possibility of water pollution from sewage passing into or through toilets aboard watercraft. Many of these devices have been tested by various state public health and water pollution control agencies and independent laboratories and found to be efficient for their purpose. However, with further improvements and innovations likely in this product area in the future, it is unwise to "freeze" specifications for such devices in statutory language. All technological changes can be readily incorporated into rules and regulations.

The desirability of nationwide uniformity in requirements for marine toilet pollution control devices cannot be emphasized too strongly. Boatmen will have to incur additional expense to install and maintain such devices. It would be a hardship and an inconvenience for boatmen traveling from state to state to be subjected to different jurisdictional standards of acceptability of these devices.

§ 5. MARINE TOILETS - CHEMICAL TREATMENT FACILITIES - STANDARDS

(a) Every chlorinator or chemical treatment facility shall be securely affixed to the interior discharge opening of a marine toilet, and all sewage passing into or through such toilet shall pass solely through such treatment facility.

(b) Sewage passing through a marine toilet equipped with a chlorinator or chemical treatment facility shall be deemed untreated unless the effluent meets the following minimum standards:

1. Sufficiently divided into fine particles so as to be free of unsightly solids.

2. Containing 1,000 or less coliform per 100 ml.

This standard meets the requirements of the U. S. Public Health Service and is acceptable by most state public health agencies for swimming and bathing purposes.

(c) The chlorinator or chemical treatment facility shall be of a type which functions automatically with the operation of the marine toilet, does not depend on septic action as part of its treatment, is easy to clean and maintain, and does not permit the escape of dangerous gases or obnoxious odors.

(d) The disinfecting agent used in the facility shall be of a kind that does not necessitate too frequent replenishment, is easily obtainable, and when discharged as a part of the effluent is not toxic to humans, fish or wildlife.

The foregoing standards are generally acceptable under existing state marine chlorinator laws. In the interest of uniformity they are recommended to other states proposing the adoption of such laws.

§ 6. MARINE TOILETS - STANDARDS FOR MANUFACTURERS OF POLLUTION CONTROL DEVICES

Every manufacturer of a marine toilet pollution control device described in this Act shall certify to the Department in writing that his product meets the standards set forth in this Act or in any implementing regulations adopted by the Department. Every such certified statement shall be accompanied by a test report showing that the product meets the prescribed standards. It shall be unlawful to sell or to offer for sale in this State any marine toilet pollution control device that has not been so certified and approved by the Department.

EXHIBIT 72
Page 5

§ 7. CERTIFICATE OF NUMBER

The Department may require persons making application for a certificate of number for a watercraft pursuant to (statutory citation of State Boat Numbering Act to be entered here) to disclose whether such watercraft has within or on it a marine toilet, and if so, to certify that such toilet is equipped with a suitable pollution control device as required by this Act. The Department is further empowered to direct that the issuance of a certificate of number or a renewal thereof be withheld if such device has not been installed as required by this Act.

§ 8. ON-SHORE TRASH RECEPTACLES

The owner or whoever is lawfully vested with the possession, management and control of a marina or other waterside facility used by watercraft for launching, docking, mooring and related purposes shall be required to have trash receptacles or similar devices designed for the depositing of trash and refuse at locations where they can be conveniently used by watercraft occupants.

§ 9. EDUCATION

The Department is hereby authorized to undertake and to enlist the support and cooperation of all agencies, political subdivisions, and organizations in the conduct of a public educational program designed to inform the public of the undesirability of depositing trash, litter, and other materials in the waters of this State and of the penalties provided by this Act for such action, and use funds provided by the Legislature for this purpose. The Department is further authorized to utilize all means of communication in the conduct of this program.

§ 10. ENFORCEMENT

All watercraft located upon waters of this State shall be subject to inspection by the Department or any lawfully designated agent or inspector

EXHIBIT 72
Page 6

thereof for the purpose of determining whether such watercraft is equipped in compliance herewith. The Department is further authorized to inspect marinas or other waterside public facilities used by watercraft for launching, docking or mooring purposes to determine whether they are equipped with trash receptacles and/or sewage disposal equipment.

§ 11. LOCAL REGULATIONS PROHIBITED

Through the passage of this Act, the State fully reserves to itself the exclusive right to establish requirements with reference to the disposal of sewage from watercraft. In order to ensure state-wide uniformity, the regulation by any political subdivision of the State of sewage disposal from watercraft is prohibited.

§ 12. RULES AND REGULATIONS

The Director of the Department is hereby authorized and empowered to make, adopt, promulgate, amend and repeal all rules and regulations necessary, or convenient for the carrying out of duties and obligations and powers conferred on the Department by this Act.

§ 13. FILING OF REGULATIONS

A copy of the regulations adopted pursuant to this Act and any of the amendments thereto, shall be filed in the office of the Department and in the office of the (official State record keeping agency). Rules and regulations shall be published by the Department in a convenient form.

§ 14. PENALTIES

(a) Every manufacturer of a marine toilet pollution control device who violates Section 6 of this Act or any regulations adopted by the Department pursuant thereto shall be deemed guilty of a misdemeanor and upon conviction shall be punished with a fine of not more than $______.

(b) Any person who violates any other provision of this Act or regulations of the Department adopted pursuant thereto shall be deemed guilty

EXHIBIT 72
Page 7

of a misdemeanor and upon conviction shall be punished with a fine of not more than $______, or by imprisonment of not more than ______ days, or by both such fine and imprisonment at the discretion of the court.

§ 15. SAVINGS CLAUSE

If any court shall find any section or sections of this Act to be unconstitutional or otherwise invalid, such findings shall not affect the validity of any sections of this Act which can be given effect.

§ 16. EFFECTIVE DATE

The provisions of this Act with reference to requiring watercraft with toilet facilities to be equipped with pollution control devices shall take effect three years from the date of the adoption of this Act. The provisions of this Act prohibiting littering the waterways shall take effect immediately.

It is suggested that the effective date of this Act be delayed so that all persons affected by its provisions will have a reasonable amount of time to become acquainted with it and secure the required treatment devices.

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EXHIBIT 73
Page 1

LITTER AND POLLUTION PANEL
INTERCLUB ASSOCIATION OF WASHINGTON

Seattle Yacht Club November 19, 1966

The problem of litter and pollution needs little discussion. All boating people have experienced problems or discomforts as a result of it and many, too many in fact, have contributed to it. The resolution to the problem rests squarely on pleasure boatmen, commercial users of our waters and Government operated vessels. To eliminate the apathy surrounding the litter and pollution problem and getting all affected parties working simultaneoulsy and effectively is a major consideration.

Accordingly, it was the consensus of the panel to establish some programs upon which the Interclub could take positive action. However, at the same time, not attempt to undertake a program of such magnitude that mediocre results would be generated due to limited manpower and funds. A program of this type is primarily one of continuing education if it is to be successful. Objectively, then, we should start with something we can handle and enlarge it as it gains momentum. A few suggestions are outlined below for action by this and future committees. They do not, by any means, represent a total list of possible ideas:

A. Anti-litter

1. Promote a statewide education program through yacht and boat clubs. One of the most common causes for litter is the noticeable lack of disposing facilities. If such facilities are not readily available, it doesn't take much imagination to determine just how litter will be discarded --in fact, it's quite evident on our beaches and in our water. The education program would, therefore, be one of enlisting help from all clubs to initiate and maintain a complete program of their own based upon the Interclub's initial recommendations. One such suggestion would be for the clubs to enlist the aid of Governmental agencies and private enterprises in their local area to provide adequate disposing facilities and to impress the need for keeping our beaches and water free of debris. For another, a complete anti-litter campaign could be easily developed around a slogan: "If you can take it with you - you can bring it home".

2. Promote a similiar campaign with the commercial fishermen and governmental agencies. For years commercial vessels have used our navigable waters as garbage dumps. Daily hundreds of barrels of litter are dumped off the fantail. The garbage may disappear quickly and certain heavy objects will sink, but there remains the wooden crates to foul running gear and fish nets, unsightly styrofoam cups to spoil the water, plastic materials to get sucked into water intakes and bottles to break up on our beaches. A suggested Interclub program would enlist

EXHIBIT 73
Page 2

the cooperation of Washington State Ferries, U.S. Military, the Canadian Government and the commercial fishermen to stem the litter disposal.

3. Use boat shows as education media. This needs little further explanation. Annually, thousands of persons visit the many boat shows offered throughout the state. Sponsors of each show could designate certain space for the display of posters, showing slide presentations and making available appropriate hand-out material.

4. Develop the cooperation of insurance companies. The insurance people certainly have a large stake in problems caused by water borne litter. Thousands of rudders, propellers and hulls are damaged annually by debris and deadheads. Engines are being damaged in ever increasing numbers due to plastic type materials being sucked into or against water intakes. Insurance companies might, then, in cooperation with the Inter-club undertake an anti-litter campaign through its advertizing media and customer mailings.

5. Cooperate with existing anti-pollution organizations. There are a number of governmental agencies and civil organizations currently committed to the anti-pollution program. By cooperating with such groups, duplication of certain administrative effort can be eliminated, additional helping hands can be made available, existing promotional materials can be utilized and a host of other advantages can result be pooling efforts and talents.

B. Pollution

The main problem, as far as boating people are concerned, is the discharge and collection of wastes in areas where boating people congregate, not necessarily the open and fast water channels. the problems in these popular congregating areas is amplified if such area is adjacent to swimming areas and fine beaches.

Solving the problem of waste disposal is long and extremely complex. Many factors must be considered. For example, to what extent should legislation be used - if any, to whom would it apply considering the fact our waters are used by commercial and military ships and visiting yachtsmen from neighboring states and Canada, how would such a program be regulated and by whom, what type of educational program should be installed and how would it be carried out and what boating waters require special attention, if any. Obviously, the problem is going to require considerable discussion and some deep-rooted thinking.

The installation of chemical heads is, of course, a reasonable solution, but the changeover with today's existing units is both expensive and very difficult due, primarily to limitations of spaces. Not only is the existing units costly from an equipment standpoint, but their design often require expensive cabinet work and/or shipwright labor. What is needed is a small, relatively inexpensive but very efficient self contained unit which could replace the existing units by a simple "remove and replace" basis. Unfortunately, such a unit does not exist today.

EXHIBIT 73
Page 3

Here again, the same questions asked above can apply here but, at the same time, new questions pop up. The foregoing units might be installed in big roomy cruisers, but what about the small outboard cruiser or runabout, sailing craft and livery boats. These types of boat outnumber the big cruisers three to one - and perhaps more.

Some sort of legislation may come; however, there just may be a way by exploring and exploiting all the available channels of an extensive education program. It certainly is not too unreasonable to presume the boating people could resolve their own problems if they really put their heads-up progressive thinking into an action program. Perhaps not. We've only touched the surface.

Respectfully submitted,

Russell C. Freeman, Chairman
Litter and Pollution Panel

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EXHIBIT 74
Page 1

PROPOSED POLICY ON SEWAGE AND WASTE DISPOSAL FROM VESSELS

PREPARED BY

DIVISION OF ENVIRONMENTAL ENGINEERING AND FOOD PROTECTION

U.S.P.H.S.

Under the provisions of the Interstate Quarantine Regulations, the Public Health Service is required to take necessary action to prevent the spread of communicable disease from one State or possession to any other State or possession. Historically, the Service has discharged its responsibility in this area through the exercise of the surveillance and control over health problems incident to the interstate movement of vessels, railroads, aircraft, and buses. The growth of vessel operations interstate has required an increased degree of surveillance over their activities both for the protection of the health of the passengers and crews and more recently to the particular problems incident to actual transmission of disease organisms interstate as a result of normal vessel operations. The specific legal authority is contained in the Interstate Quarantine Regulations, Section 72.111, which reads as follows:

> "72.111 Applicability. The sanitation facilities and the sanitary conditions on vessels engaged in interstate traffic shall comply with the requirements prescribed in this subpart, provided that no major structural change will be required on existing vessels."

The continuing problem of proper disposal of sewage wastes from vessels has been accentuated within the past few years. The Service in cooperation with the other Federal agencies involved and the vessel industry, has devoted considerable time in attempting to develop rational methods for the proper disposal of sewage and wastes in order to eliminate the serious public health hazards which might result from the disposal of such wastes.

This proposed policy was developed with the assistance of members of the Interdepartmental Committee on Sewage and Waste Disposal from Vessels.

EXHIBIT 74
Page 2

This particular problem was highlighted with the opening of the St. Lawrence Seaway which resulted in increased traffic on the Great Lakes by vessels of both American and foreign flag registry. Considerable fear has been expressed regarding the possible discharge of waste from such vessels in the proximity of waterwork intakes by municipalities utilizing the Great Lakes as a source of water supply. As an interim action, the Interstate Quarantine Regulations were revised on August 30, 1960, to restrict the discharge of sewage, ballast or bilge water from vessels in some 150 areas adjacent to potable water intakes on the Great Lakes. The delimiting action incorporates an area with a radius of three miles around each of these intakes. It was recognized that this represented solely an interim action pending the development of acceptable methods of sewage treatment of disposal. Concurrently, there has been an increased interest on the part of local, State and Federal authorities in problems created by sewage discharges from all types of water conveyances including pleasure craft. In order to provide a mechanism for further consideration of the problem, the Public Health Service established an Interdepartmental Committee on Sewage and Waste Disposal from Vessels to assist in developing a solution to these problems. On the basis of the Committee's recommendations, the Interstate Quarantine Regulations will be amended to require that vessels subject to the Regulations provide adequate sewage treatment facilities. Federal agencies that own, operate or are involved in the construction of vessels could use these recommendations as a guide. In addition, it is anticipated that the guidelines contained in the policy issuance from the Committee and the criteria contained in the Interstate Quarantine Regulations will be useful to State and local health agencies in exercising their responsibilities on intrastate vessel sanitation problems, particularly in respect to noncommercial pleasure craft.

EXHIBIT 74
Page 3

Recommendations:

1. Waste to be Treated

All new vessels or vessels undergoing major conversion, destined for operating in interstate traffic under the terms of the Interstate Quarantine Regulations, shall be equipped with facilities to treat wastes from toilets, urinals, facilities in hospital areas handling fecal material and wastes from garbage grinders when such grinders are installed. In lieu of treatment, these wastes may be collected in holding tanks properly equipped with pumps and piping, so that the wastes can be discharged to approved shore-based or floating installations.

2. Galley Wastes

All galley wastes, exclusive of ground garbage, which might contain grease shall pass through grease interceptors prior to their discharge overboard or to the treatment unit aboard the vessel. Where grease interceptors are installed, the grease collected shall be disposed of by incineration, stored for disposal ashore, or discharged overboard on the high seas. Grease interceptors shall be designed and installed in accordance with the applicable provisions of the National Plumbing Code, ASA A40.8.

3. Design Flow Rates

The design of treatment facilities and holding tanks shall be based on an average flow of at least 30 gallons per capita per day.

4. Effluent Quality (41 or more passengers and crew)

For vessels with a normal complement (passengers and crew) of 41 or more, minimum treatment shall be such as to produce an effluent with 50 ppm or less of B.O.D., 150 ppm or less of suspended solids, and a coliform MPN of 1,000 or less per 100 ml.

Facilities shall be provided for the storage of excess sludge for proper disposal to approved land based facilities or on the high seas.

5. Effluent Quality (40 or less passengers and crew)

For vessels with a normal complement (passengers and crew) of 40 or less, minimum treatment shall consist of passing the wastes through a grinder followed by disinfection which will produce an effluent having a coliform MPN of 1,000 or less per 100 ml.

6. Disinfection

A method of disinfection equally effective to chlorination may be acceptable where disinfection is required to produce an effluent meeting the coliform requirements specified in paragraphs 4 and 5 above.

7. The above requirements do not apply to vessels operating intrastate.